INTERNATIONAL MONETARY FUND

STAFF PAPERS

ADM. ARY 881 634 5 .3

APR 15 '57
BUSINESS ADMINISTRATION LIBRARY

CONTENTS

RECENT DEVELOPMENTS IN MONETARY ANALYSIS..... 303

Method of Monetary Analysis Used by De Nederlandsche Bank
M. W. Holtrop 303

Monetary Analysis in Italy.....Paolo Baffi 316

Federal Reserve Flow-of-Funds Accounts.....Ralph A. Young 323

Monetary Analyses
Karl Hicks, Graeme S. Dorrance, and Gerard R. Anbanel 342

SPECIAL TAX MEASURES TO RESTRAIN INVESTMENT
Richard Goode 434

AN EXPERIMENT WITH A FLEXIBLE EXCHANGE RATE SYSTEM: THE CASE OF PERU, 1950-54.....S. C. Tsiang 449

THE COST OF A FOREIGN EXCHANGE STANDARD OR OF THE USE OF A FOREIGN CURRENCY AS THE CIRCULATING MEDIUM
Eugene A. Birnbaum 477

VOL. V, NO. 3 FEBRUARY 1957

STAFF PAPERS

ALLAN G. B. FISHER, *Editor*
DOROTHY WESCOTT, *Assistant Editor*

Editorial Committee

Allan G. B. Fisher, *Chairman*
Hans Aufricht
Richard Goode
M. M. Hassanein
Charles L. Merr
Henry C. Murp
Brian Rose
Ugo Sacchetti

From the Foreword to the first issue:

"Among the responsibilities of the International Monetary Fund, set forth in the Articles of Agreement, is the obligation to 'act as center for the collection and exchange of information on monetar and financial problems,' and thereby to facilitate 'the preparation studies designed to assist members in developing policies which furth the purposes of the Fund.' The publications of the Fund are one wa in which this responsibility is discharged.

"Through the publication of *Staff Papers*, the Fund is makin available some of the work of members of its staff. The Fund b lieves that these papers will be found helpful by Government official by professional economists, and by others concerned with monetar and financial problems. Much of what is now presented is quite pro visional. On some international monetary problems, final and defini tive views are scarcely to be expected in the near future, and severa alternative, or even conflicting, approaches may profitably be ex plored. The views presented in these papers are not, therefore, t be interpreted as necessarily indicating the position of the Executiv Board or of the officials of the Fund."

The authors of the papers in this issue have received considera assistance from their colleagues on the staff of the Fund. This ge statement of indebtedness may be accepted in place of a detailed of acknowledgments.

Subscription: US$3.50 per volume or the approximate equiva in currencies of most countries. Three numbers constitute a vo The numbers, however, are not issued at regular dates; moreover, of the three numbers are not necessarily issued within one c endar year. Single copies may be purchased at US$1.50. Subscripti and orders should be sent to:

THE SECRETARY
International Monetary Fund
1818 H Street, N.W.
Washington 25, D.C.

INTERNATIONAL
MONETARY FUND

STAFF PAPERS

Vol. V February 1957 No. 3

Recent Developments in Monetary Analysis

As a part of the proceedings of the Eleventh Annual Meeting of the Board of Governors of the International Monetary Fund, an Informal Session on "Recent Developments in Monetary Analysis" was held on September 25, 1956. The three papers which were presented at that Session by Dr. M. W. Holtrop, President of De Nederlandsche Bank, Dr. Paolo Baffi, Economic Adviser to Banca d'Italia, and Dr. Ralph A. Young, Director of the Division of Research and Statistics, Board of Governors of the Federal Reserve System, are reproduced below, together with the background paper, "Monetary Analyses," prepared by the Statistics Division of the Research and Statistics Department of the International Monetary Fund.

Method of Monetary Analysis Used by De Nederlandsche Bank

M. W. Holtrop, President of De Nederlandsche Bank

Purpose of the method

The purpose of the method of monetary analysis which has been developed in the last few years in the Annual Report of the Nederlandsche Bank is essentially of a practical nature. It is meant to provide the Bank with a tool to help it in unraveling the mechanism of inflationary and deflationary disturbances and thus to aid the Bank in framing its policies.

I think that most of us will agree that it is one of the prime duties of central banks to prevent or at least to counteract—as far as is possible within the limits of their authority—any inflationary or deflationary developments of sufficient magnitude to create a threat to the long-run stability of the internal and external purchasing power of their monetary unit.

In order to be able to prevent or to counteract inflationary or deflationary developments, one must first be able to recognize them—and, if possible, to recognize them in their earliest stage. This may be done either by looking for the symptoms of their causes or for the symptoms of their effects.

Except in cases of gross monetary mismanagement, it has always been felt easier to recognize the effects of monetary disturbances than to clearly recognize their causes. We all agree that boom conditions, over-

employment, increases in the price level, and balance of payments deficits —especially when showing up simultaneously—are indicators of internal inflationary disturbances, whilst underemployment, price falls, and balance of payments surpluses indicate deflationary conditions. Yet, when some of these symptoms contradict one another, we may feel less sure about the interpretation of our data, and even when agreeing about the observed effects we may find it difficult to agree upon their causes.

In the Netherlands, for example, the post factum analysis of the economic situation in 1953 led to very contradictory opinions about the monetary causes that had been at work. In the Annual Report of the Nederlandsche Bank, I myself concluded that a rather strong deflationary impulse emanating from the government sector had only partly been compensated by lesser inflationary pressures from the private sector, whilst their combined effect had been overcome by strong inflationary impulses from abroad, thus explaining the observed combination of mild boom conditions, increased employment, stable prices, and a rather big balance of payments surplus; however, Professor Witteveen, of the Rotterdam School of Economics, concluded on the basis of increased government expenditure and increased private investment that both government and the private sector of the economy had exerted a strong inflationary impulse, whilst the inflationary influences from abroad—judged by the increase in exports—had been rather negligible.

It is not difficult to imagine that the public showed itself rather flabbergasted by these contradictory opinions, and it took indeed some time before the core of the differences between the two authors had been thoroughly thrashed out in a very illuminating discussion, published in one of our leading economic periodicals.[1]

This discussion proved that, within the limits of their own definitions and methods of approach, both authors from a formal point of view had been right in their contradictory conclusions.

To understand how this was possible one must be conscious of the fact that any quantitative analysis of economic phenomena has to be based upon a set of simplified suppositions with regard to the interdependency of the different factors which are to be observed. This set of simplified suppositions is what economists nowadays call a "model." The simplification lies in the fact that on the basis of some presupposed rules of behavior—algebraically laid down in equations—a quantitative relationship between different phenomena is established. By considering only a limited number of factors to be open to "autonomous variations"

[1] See *Monetaire Uiteenzettingen* (Overdruk uit *Economisch-Statistische Berichten*, Rotterdam, 1956). See also H. C. Bos, *A Discussion on Methods of Monetary Analysis and Norms for Monetary Policy* (Netherlands Economic Institute, Rotterdam, 1956).

and the others to be "dependent variables," one is able, with the help of such a model, to predict the probable consequences of assumed variations in the autonomous factors.

Also, post factum, one is able, by linking the observed variations in the dependent factors to the observed variations in the autonomous ones, to allocate the "causes" of the variations in the former, albeit that to explain the post factum quantitative relationships one may have to introduce also some "autonomous" changes in the actual rules of behavior compared with the assumed ones.

The fun, but also the trouble, of this method is that one is always technically right. Not of course in predicting the future, but always in explaining the past. It is for this reason that one should beware of the fact that a model is nothing but a piece of man-made machinery. One can never get out of it what substantially has not been put into it beforehand.

The post factum analysis can only show as "causes" the factors which have been introduced as "autonomous variables" when framing the model. If, post factum, the observed changes in the autonomous factors cannot fully explain, i.e., quantitatively do not fit in with, the observed changes in the dependent ones, such divergences simply have to be attributed to some "autonomous" change in the equations of behavior. Reality is always right. Any consistent model can technically explain everything. The point is whether the explanation has any relevancy.

These considerations prove the importance of choosing one's model, i.e., one's method of approach to a problem. My controversy with Professor Witteveen made it clear that by inflation and deflation he actually meant increase or decrease in national income. Consequently, he sought the ultimate causes of inflation and deflation in variations in a set of factors, which he considered to be the only autonomous determinants of changes in national income, viz., government expenditure, private investment, and changes in exports. These autonomous changes in expenditure are linked with their multiple effect on the national income by way of the income multiplier, a constant to be derived from the propensity to save, the propensity to import, and the rate of taxation.

Professor Witteveen's method of approach thus proved to be fundamentally of a nonmonetary nature. In the frame of his "model," monetary policy in the sense of banking policy and central bank policy cannot find any place whatsoever, the provision of finance to enable entrepreneurs to carry out their autonomous investment decisions, and to enable Government to carry out its expenditure decisions, being implicitly supposed to adapt itself to demand.

It is clear that such a model cannot fit the purposes of a central bank.

If one analyzes monetary phenomena with the purpose of getting some guidance for monetary policy, one must necessarily use a model in which monetary policy can find its place. If we believe that by monetary policy we can exert an influence on the creation of money, and maybe also on the propensity of the business community to hoard or to dishoard, and if we further believe that the exertion of such influence will affect the course of the inflationary or deflationary process, then, for the exposition of our ideas, we must choose a model in which the creation and cancellation of money and the acts of hoarding and dishoarding are treated as autonomous factors.

It is the purpose of the Bank's method to provide the data for such a model.

Background of the method

The line of thought on which the Nederlandsche Bank has based its analysis of monetary conditions starts from the proposition that the essence of monetary disturbances is to be found in the possibility, created by the use of money, of exercising effective purchasing power in excess of, or in deficiency of, current contribution to production. This can be done only by financing expenditure out of the creation of new money or by drawing on available liquid reserves, or, reversely, by hoarding money or taking it out of circulation. Such financing is, in the terminology of the Bank's Report, called an inflationary or deflationary method of finance.

Any inflationary monetary disturbance must be accompanied by money creation or dishoarding, i.e., by inflationary financing; any deflationary disturbance, by hoarding or cancellation of money, i.e., by deflationary financing.

It is important to see that this way of approach brings the problem of monetary disturbance back to the individual households.[2] Inflation is a problem of financing. It is the decision of individual households on how to finance their expenditure which is decisive for the occurrence or non-occurrence of a monetary disturbance. In a closed economy, such initial disturbance is connected with its multiple effect on production, income, and prices by way of the monetary multiplier; in an open economy also, the balance of payment effects have to be taken into consideration.

From the monetary point of view, these acts of spontaneous inflationary or deflationary financing must be considered as final causes. Even if, from a more general point of view, we may conclude that they are not

[2] In economic literature in the Netherlands, the word "huishouding" is used with a wider connotation than is conveyed by the literal English translation, household. The word covers all the units by which economic decisions are made, and therefore includes not only family households, but also businesses, local authorities, and the Central Government.

quite autonomous, but that they themselves are motivated by other factors, we must consider them as final from the monetary point of view, because it is indeed the use of money that makes them possible and because it is our task as monetary authorities to concentrate on the problem of how to prevent, to restrain, to neutralize, to compensate, or, under certain very special circumstances, to stimulate them by the use of monetary policies.

Now we all know that, though banking statistics allow us to observe the sum total of the acts of creating and canceling money, we have no proper means of observing the acts of spontaneous hoarding and dishoarding. Worse still, even though, by observation of individual households, we may be able to observe spontaneous acts of hoarding and dishoarding, we may find it difficult to distinguish them from the acts of induced dishoarding and hoarding that are their necessary concomitants. As Robertson's famous dictum says: All money that is anywhere must be somewhere. Newly created money, once introduced into the income stream, must be held by some household. How can we distinguish this induced increased holding of money, which forms a reaction to the inflationary process, from the spontaneous hoarding that must be interpreted as a deflationary impulse?

The analysis of the Nederlandsche Bank is based on the contention that by applying certain techniques we can indeed, to a certain extent, do so.

Any act of inflationary financing—and in order not to make my argument too involved I shall now leave out the case of an act of deflationary financing, which leads, of course, to reversed consequences—as I say, any act of inflationary financing leads somewhere else to an increase in income—which may be either real or only nominal—or to a temporary disinvestment. Both will be accompanied by an act of hoarding. But the type of hoarding will be different in these two instances.

The act of hoarding that accompanies a temporary disinvestment which takes place in reaction to inflationary impulses elsewhere is nothing but the expression of a delaying factor in the inflationary process. There is no reason why in a free market economy this type of reaction should be lasting. After a short period of transition, normal dispositions will again prevail. For the time being, this reaction may indeed impede the observation of the forces that are at work and lead us to underestimate the strength of the inflationary impulses. If our observations relate to a sufficient lapse of time we may, however, safely ignore this temporary reaction, unless it be stimulated by the application of direct physical controls. In the latter case, it will lead to the phenomenon of "latent" inflation which we well remember from the strictly controlled economies of the war years.

The acts of hoarding—in the sense of increase of average cash balances held—that accompany any increase of income and turnover are of a different type. They result from the increase in the need of money for transaction purposes which is the necessary concomitant of any increase in the real or nominal level of income and turnover. It is this absorption of money in the transaction sphere which eventually sets a limit to and consolidates the effects of the original inflationary impulse. Any new income, by being spent, tends to create additional income and would continue to do so if the money, created or released by the original act of inflationary financing, were not gradually absorbed by the need for increased cash balances.

It is this absorptive reaction to the inflationary process which is the only lasting one and which has to be separated from the total of observable impulses in order to gauge properly the strength of the inflationary forces that are at work. Such separation can very well be based on circumstantial evidence. If we see that during a period of expanding production the business community has been heavily relying on credit expansion and has, moreover, been running down its holdings of near-money, such as treasury bills and long-term bank deposits, we need not feel any doubt that any observed increase in its cash balances is not due to any autonomous hoarding, but is to be interpreted as a reaction to the existing inflationary development. On the contrary, we may have every reason to believe that a certain amount of autonomous dishoarding of inactive money has been adding to the inflationary impulses and has contributed to increase the amount of active money now being absorbed by trade.

A further problem which arises when observing the financing dispositions of the individual households is the question of the exact definition to be given to the notions of hoarding and dishoarding.

As soon as we recognize that the original monetary disturbance consists of the withholding of purchasing power by an act of hoarding or, contrarily, by the exercise of purchasing power coming from resources other than current income, we have to make up our minds about the interpretation of transactions in the financial field. There are three possible courses of action.

In the first instance, one may interpret any act of saving, if it is also accompanied by simultaneous financial investment, as an act of hoarding, and any financing out of funds obtained from others as an act of dishoarding. This interpretation would force us to call any and all saving deflationary, and any investment, except out of own current income, inflationary. In my opinion this terminology would be grossly misleading. The transfer of funds by way of the capital market from a party who

chooses not to invest in realities himself, to another party who does, is so much part and parcel of the normal flow of funds, and has so little to do with what we recognize as actual or potential monetary disturbance, that it would definitely be misleading to interpret such transfer as a deflationary activity on the part of the lender and an inflationary activity on the part of the borrower that happen to compensate one another.

A second possibility would be to reserve the notions of hoarding and dishoarding to hoarding and dishoarding of money itself. This would mean that any transfer of purchasing power by transactions in the financial field would be considered as indifferent from the monetary point of view. At first sight this solution would seem perfectly logical.

On second thought we find, however, that this method of interpretation would have many disadvantages by covering up financing dispositions, which are of essential importance in the analysis of inflationary and deflationary processes, and by forcing us to attribute different meanings to financing dispositions which in the eyes of the individual households themselves are perfectly equivalent.

The Nederlandsche Bank has therefore chosen a third possibility, by applying the notion of hoarding and dishoarding—and consequently the notions of deflationary and inflationary financing—not only to the act of hoarding and dishoarding of money itself, but also to the act of accumulating or running down liquid reserves in the form of certain types of near-money, the so-called secondary liquidities, i.e., short-term claims on the Government, local public authorities, and money-creating institutions.

Its reasons for doing so are the following: In the first instance, one must recognize that secondary liquidities, although they cannot directly be used as a means of payment, and therefore lack one essential function of money itself, are, for all practical purposes, equivalent to money in its function as a store of value. Consequently, there is not much sense in applying the notions of liquidity preference, of hoarding for reasons of the precautionary or the speculative motive, etc., exclusively to money itself. We are much nearer to reality, i.e., to the considerations that motivate the individual households, by applying these notions to the sum total of primary and secondary liquidities.

For a business concern of some magnitude, it is a matter of slight interest differentials whether to keep its liquid reserves in a current account balance, in a short-term bank deposit, or in treasury bills. If it decides not to reinvest for the time being the amounts accumulated on depreciation account—and that is one of the essential deflationary impulses that may originate in the private sector—then it may decide on either one or the other. On the other hand, it would not dream—at any

rate not in the Netherlands—of investing its liquid reserve in bonds or in the stock market.

It is therefore quite proper to register the accumulation of money, of bank deposits, or of treasury bills as one and the same act of hoarding. Of course, if the accumulated treasury bills do not come out of the stock of treasury bills held by the banking system, in which case a clearly deflationary cancellation of money takes place, but are directly bought from the Treasury, and if the Treasury uses the money thus obtained for current expenditure, then indeed there need not be any net deflationary disturbance. In that case, however, it is much more illuminating, and therefore more relevant, to interpret this joint transaction as a deflationary development in the private sector, compensated by an inflationary development in the government sector, than to pass it over as a transaction that, from the monetary point of view, could be considered indifferent. For even if no actual monetary disturbance has taken place, a potential one has been created. When, some time later, the private sector decides to reinvest and forces the Treasury to repay its short-term debt, the Treasury in all likelihood will have to fall back on the banking system to meet its liabilities.

It is important to recognize that the impulse for this creation of money has originated in the private sector, even though we may find it necessary to insist that it is up to the Government to compensate this inflationary impulse by some deflationary financing of its own.

A second reason for the Nederlandsche Bank's extension of the notion of hoarding and dishoarding to secondary liquidities follows from the first. It is the fact that this interpretation allows a better, i.e., a more illuminating, allocation of the responsibility for inflationary and deflationary developments to the separate sectors of the economy.

A possible objection to the applied method is that, though it may be admitted that it is indeed difficult to draw a clear line of distinction between money and secondary liquidities, the same holds true for the distinction between the claims we do and those we do not include in the notion of secondary liquidity. Why, one might ask, include treasury bills in the first category but not short-term treasury bonds? The answer is that this objection is perfectly correct but that not too much importance should be attached to it. There generally are no sharp lines of distinction in practical life. Yet we have to draw them the best we can, the distinction of categories being an indispensable tool for any analytical thinking.

It may indeed very much depend upon local circumstances where the line has to be drawn between what is to be considered as secondary liquidity and what is not. The essential point is that only short-term debts of Government and money-creating institutions can properly be con-

sidered as falling in this category. For the essential difference between secondary liquidities and other relatively liquid claims is that the latter can be converted into actual money only by withdrawing purchasing power from the debtor or from some party who is willing to substitute himself for the creditor, whilst the owner of secondary liquidities can, for all practical purposes, force the debtor to create new money, because that debtor is either a money-creating institution, which has only to credit the owner of the claim on current account, or the Government, which would rather find some way to create new money than default on its debts.

Technique of the method

After these preliminaries about the basic ideas behind the method of analysis of the Nederlandsche Bank, the method itself is easily described. It consists of splitting the economy into separate sectors, so as to get as near as possible to what is happening in groups of individual households, and then to register the use of inflationary or deflationary methods of finance in each sector separately. Thus the Bank distinguishes (1) Central Government, (2) Local Authorities, (3) Institutional Investors and Miscellaneous Funds, (4) Capital Market and Sundry Items, and, finally, as a residual item (5) Private Individuals, Trade, and Industry. By using sample survey techniques, which the Nederlandsche Bank so far has not done, one might carry this sectional split still further, particularly for distinguishing between private households and entrepreneurs.

For each separate sector, the total amount of ascertainable net deflationary or inflationary financing is calculated. This total finds expression in the ascertainable liquidity surplus or liquidity deficit of the group. In a closed economy, the sum total of all liquidity surpluses and liquidity deficits must of necessity be zero. In an open economy, the sum total is equivalent to the national liquidity surplus or deficit, i.e., the balance of payments surplus or deficit. This surplus or deficit can again be interpreted as a deficit or surplus of a sixth sector of the economy, namely, the sector Foreign Countries.

Now, for most sectors, the ascertainable liquidity surplus or liquidity deficit can be taken as a direct measure of the net deflationary or inflationary impulse that has originated in that sector. For all practical purposes it is only in the sector Private Individuals, Trade, and Industry and in the sector Foreign Countries that the difficulty arises of properly distinguishing between financing dispositions that have to be interpreted as autonomous causes of the inflationary or deflationary processes and those dispositions that have to be interpreted as the unavoidable effects of such processes.

As I have explained before, it is—when observing a period of sufficient length—only the increase or decrease of cash holdings as a result of the transaction motive which has to be separated from the other acts of inflationary or deflationary finance and has to be interpreted as a reaction to, instead of as a cause of, the inflationary or deflationary process. Now, practically, we can say that this reaction will take place only in the sector Private Individuals, Trade, and Industry, where almost all the transaction money is being held. It is only in this sector, therefore, that the observed liquidity surplus or deficit has to be corrected for the likely change in transaction cash balances in order to arrive at an estimate of the net inflationary or deflationary impulses that have originated in this sector. Circumstantial evidence will easily give us a clue, if not to the exact magnitude, then at any rate to the direction of this reactive factor.

A second field in which we have to beware of the impulsive or reactive character of the observed liquidity surplus or deficit is in relation to foreign countries. The national liquidity surplus, i.e., the balance of payments surplus, can be just as well a reaction to the sum total of deflationary impulses that have been active internally as a measure of the inflationary impulses that have been working on the country from the outside. Here again, circumstantial evidence will have to help us in determining and interpreting the exact character of the observed facts.

The value of a scientific tool, such as an analytical method, can be judged only by the use that can be made of it. It is only when it helps us to understand better the relationship of things, to come to relevant conclusions about their interaction, and, if possible, to devise improved rules of conduct, that we have reason to prefer one method of description to another.

In this connection, it is important to know that the Nederlandsche Bank has not arrived at its method of analysis out of some theoretical deduction, but that this method has grown out of dissatisfaction with the results obtained from a previous analytical approach. This previous approach was the well-known technique of determining the causes of the changes in the volume of money from the combined balance sheet of the banking system. This technique was followed by the Bank up to 1950. But especially in the year of the Korea crisis with its terrific inflationary pressures, it proved itself quite inadequate both to explain clearly what was happening and to provide monetary policy with proper rules of conduct. It was therefore in 1951 that the Bank started with what is considered an improved analysis, which was then further developed in the ensuing years.

To give a simplified example of the type of situation with which the Netherlands was faced in 1950, let us assume that the analysis of the

causes in the changes in the volume of money provides the following data for a certain period:

Government debt to banking system	+300
Private debt to banking system	+400
Net loss of foreign exchange	−1,000
Net change in monetary circulation	−300
Environmental conditions: a booming economy and rising prices	

A customary explanation of this situation would be to say that the increased indebtedness of the government and the private sectors to the banking system indicates inflationary conditions in both sectors. One might feel surprised at the combination of these inflationary conditions with a drop in the volume of money, but would probably be satisfied by explaining this drop as the effect of the large balance of payments deficit to which one would be apt to attribute an autonomous character.

The picture completely changes, however, when, after splitting the economy into sectors and taking into consideration the movement of secondary liquidities, we find that the Government has been repaying its floating debt to the private sector to an amount of 500 units—half to institutional investors and half to the rest of the private sector—and that both institutional investors and the rest of the private sector have been spending these funds on long-term investment and on real expenditure, whilst they have also been running down their cash balances for the same purposes.

It then becomes clear that the inflationary impulse has originated completely in the private sector, that the Government in its own sphere even had a liquidity surplus, which was, however, strongly overbalanced by the inflationary financing in the private sector, this latter being fed not only from credit expansion but also from the liquid reserves in the hands of entrepreneurs, the public, and institutional investors.

Further considering the necessary increase in cash balances for transaction purposes, which must necessarily have been connected with the increase in national income resulting from boom conditions and price increases, we would rightly conclude that the drop in total cash balances in the hands of the private sector was actually giving only a feeble expression to the magnitude of the inflationary impulse exerted by the financing of new expenditure out of available cash reserves.

This example will show why the Nederlandsche Bank believes that its method of analysis, even though it cannot claim to give an exact quantitative measure of the monetary impulses that are at work, yet enables one to obtain a better insight into their origin, their character, and their approximate magnitude.

Use of the Method in Monetary Policy

As a guide to monetary policy, it is particularly important to recognize clearly the origin of both actual and potential monetary disturbances. Minding the old adage that prevention is better than cure, it must be considered the prime task of monetary policy, where possible, to prevent disturbances from arising at all. Trying to compensate for disturbances that have once developed is only a poor substitute for prevention. And yet, we have to be alive to the fact that some of the possible monetary impulses are definitely beyond the control of monetary policy. In this connection I feel that the method of the Nederlandsche Bank has the advantage over other types of analysis of better bringing home to us the enormous importance of the volume of liquid claims in the hands of the public.

Monetary policy, by the use of discount policy and other techniques, can exert a relatively strong influence on the volume of money newly created to finance new expenditure. It can exert no influence, or very little influence, on the recourse of the public to available cash reserves in the form of ready cash. Neither, however, can it exert any important influence on the recourse the public has to its reserve of secondary liquidities, and the less so, the shorter the average maturity thereof. It is almost impossible for the central bank not to accommodate the debtors of the secondary liquidities if they are faced with nonrenewal. No increase in the rate of discount can force them to default on their obligations. And the possible indirect ways of compensating an inflationary impulse which originates from a recourse to secondary liquidities are difficult to find and still more difficult to carry out.

There is much talk by economists about the compensatory anticyclical budget policies that governments ought to pursue. There is, alas, in practical politics very little to show in this field, especially in periods of inflationary boom.

These conditions may indicate that the fight against inflation has to be fought much earlier than we usually think. Much more attention may have to be given to the building up of the inflationary potential during periods of all-over monetary equilibrium by the too easy creation of secondary liquidities.

In an open economy, these conditions also have their consequences for the desirable level of foreign exchange reserves. These must be sufficient to carry the load of any irrepressible spontaneous internal inflationary development, including the possible recourse to secondary liquid resources. One of the practical applications of the use of its method of analysis in the field of monetary policy is to be found in some arrangements that exist between the Nederlandsche Bank and the Netherlands

Treasury. These arrangements are partly of a formal character and partly no more than a general understanding about some basic rules which the parties have accepted as a guidance for their policies.

Fundamentally, these arrangements are based upon the idea that indeed the liquidity surplus and the liquidity deficit of the Government, as defined by the Nederlandsche Bank, are proper measures of the deflationary or inflationary influence of government finance on the economy. As, generally, i.e., except under conditions of deflation, an inflationary influence of government finance should, of course, be avoided, the Treasury has on principle accepted the policy of not financing any expenditure by an increase of short-term debt, either in the hands of the banking system or in the hands of the public at large. On the other hand, the Nederlandsche Bank has recognized that the purpose for which the Treasury wishes to have recourse to the Bank is far more important than the fact that it should wish to do so at all. Consequently, the Bank has been willing on several occasions, e.g., in 1951, when the private sector of the economy fell back heavily on all available liquidities, to accommodate the Treasury by a direct purchase of treasury bills in order to enable it to repay short-term debt to the banks, but not to finance its own expenditure. Such recourse of the Treasury to the Bank has been called in the Bank's Annual Report a noninflationary recourse.

Also, in the conduct of its open market policy, in as far as the latter is based on the portfolio of treasury paper which the Bank obtained when the Government took over from the Bank the wartime Reichsmark claim of 4½ billion guilders, the Bank has been willing to agree to certain restrictions on its liberty of action and even to a formal obligation to accommodate the Treasury under certain circumstances, both, however, under the condition that the Government should not indulge in any inflationary financing in the aforementioned sense. In that case the Bank has regained its full liberty of action.

These examples illustrate that the analytical method we are discussing has been not only of theoretical use, but also positively helpful in coming to a sound and fruitful working relationship between the central bank and the Treasury.

The fundamental rules on which this working relationship is based follow directly from the underlying principles of the method of analysis that have just been set out. They might be summarized as follows:

(1) Borrowing by the Treasury from the central bank for the purpose of repaying debt to the banking system is by itself, i.e., apart from its indirect influence on bank liquidity, not of an inflationary character.

(2) Borrowing by the Treasury from the central bank for the purpose of repaying short-term debt to the public is by itself not of an inflationary character if the public entrusts these funds to the banking system.

(3) If, however, the public uses the released funds for financing new expenditure, such borrowing will indeed be indicative of an inflationary process. The origin of the inflationary impulse must then be attributed to the private sector of the economy.

(4) Borrowing by the Treasury from the commercial banking system for the purpose of financing expenditure has, by itself, exactly the same inflationary character as borrowing from the central bank.

(5) Borrowing by the Treasury from the public by issue of short-term debt for the purpose of financing expenditure can be actually, and is at least potentially, of an inflationary character. Such borrowing can fundamentally be justified only if serving to counteract the undesirable deflationary effects of spontaneous hoarding in the private sector of the economy.

Mr. Chairman, I am very grateful to you that you have taken the initiative for this panel discussion and that you have been so kind as to ask me to tell this illustrious gathering something about the methods the Nederlandsche Bank has been using to unravel the mystery of inflationary and deflationary developments. I do not claim that this method gives any final answer to the problem. I do believe, however, that it can be instrumental in attaining a better understanding of the strictly monetary aspects of the inflationary and deflationary process. Thus it may, perhaps, be helpful to both central banks and treasuries in better adapting their policies to fighting that curse of slow but persistent inflation that seems to be upon our present day world and to the lifting of which all our efforts should be dedicated.

Monetary Analysis in Italy

Paolo Baffi, Economic Adviser to Banca d'Italia

Italy was an early starter in the field of monetary analysis. The statement about the flow of savings and the money supply, presented below in Table 49 (pp. 398–99), was first published in the Bank of Italy Report for 1948, and included figures for 1946 and 1947. Our progress since then has, unfortunately, been slow; we have been unable to extend our coverage from "capital" to "current" transactions or to increase the sectorization. The data on lending activities are presented by class of financial institution, but we have no details concerning the ultimate lenders, and the classification of borrowers is still limited, in the table, to the division between the central Government and the rest of the economy. In order to be able to improve the sectorization, some of the things we need are an analysis of bank deposits by ownership, which is made difficult by the existence of a large volume of anonymous deposit accounts, and a

regular collection of data on installment credit, about which only a couple of sample inquiries have been carried out so far. We also need readier availability of the accounts of local authorities and social insurance institutions.

When all this is said, it remains true that we have not fully exploited the possibilities of such data as we possess by fitting them into elaborate models similar to those evolved in other countries, the Netherlands being an outstanding example. Some of the descriptions of what the Dutch have been doing and debating look rather forbidding by reason of their conceptual subtleties and their arrays of equations; but the basic magnitudes are defined in simple terms and should not prove difficult to establish in countries provided with good budget and balance of payments accounts. I venture to say that in several countries, including mine, such aggregates as the surpluses in income, finance, and liquidity, as defined in the Dutch documents, are already calculated for the country as a whole and for the government sector, in balance of payments and budget surveys, but so far they have not been organized for the purposes of monetary analysis. I trust that a result of the present meeting will be to speed up progress in this direction.

Having in mind the limitations under which we have been working in Italy, I assume that I should especially address myself to those of you who come from countries that are still taking their first steps along the path of monetary analysis, and that I should aim at covering the ground which lies immediately ahead of you, leaving to the other speakers the task of spurring on those who are already halfway toward the more ambitious goals so far attained by only a few. I shall, accordingly, try to exemplify the use of our type of flow-of-funds survey by applying it to the description of monetary developments in Italy (see Table 49).

The Italian survey of the flow of savings and the money supply has grown out of the analysis of central bank transactions which was made in earlier Bank of Italy reports. The purpose of this analysis was to trace the increase in the note issue to the central bank's transactions with the Government, to its transactions with the banks, and to Italy's transactions with foreign countries. The paper prepared by the Fund staff would seem to indicate that monetary analysis in a number of countries is still in this initial stage.

The second step was to move on from an analysis merely of currency movements to one including the entire money supply, by visualizing as a whole the monetary system formed by the central bank and all other banks. From our detailed statement it may be seen that, against the change in assets of the banks and savings banks, we set three sources of finance: (1) the accumulation of funds in savings and time deposit ac-

counts; (2) the creation of bank money as reflected in current accounts; (3) the creation of central bank money, as reflected in the balance of transactions of the banks and savings banks with the Bank of Italy. By taking this second step, we were obviously extending the analysis from activities which are entirely money-creating, such as those of the central bank, to others for which savings accounts in addition to money creation are a source of finance.

A further step was made by bringing into the framework of our statement the activities of long-term credit institutions and of the capital market which consist entirely of the investment of savings and have no money-creating effect. Security issues are shown in the statement both gross and net of bank investments.

The first row of totals in Table 49 shows the distribution of funds between the Government and the private sector and the contributions of the various sources. The area covered by this row of totals is coterminous with the jurisdiction of the monetary authorities under the Bank Control Act and the statutes regulating the issue of securities. It is therefore a matter of some interest, from the point of view of monetary management, to follow the movement in these totals through time and to compare it with changes in certain relevant aggregates drawn from national income statistics, such as those for gross and net investment, as well as to follow the change in the relative size of the various elements composing the total stream. Thus, in the Annual Report of the Bank of Italy for 1955, attention was drawn to a tendency for the flow of funds to decrease in relation to the flow of investments, owing to increased government saving and to the large volume of self-finance in the fields of housing and business investment.

The Bank of Italy's transactions with the Government and with the Exchange Control Office, which have as their only counterpart the creation of central bank money, are listed below the first row of totals. The list of these flows serves to complete the picture of central bank money creation and to establish the total of treasury cash drawings other than those derived from taxation and government property, namely, the Government's finance deficit.

So much for the nature and the presentation of the data. If we examine the total flow of funds just described, we see that it is characterized by well-defined movements, especially when we adjust the figures for seasonal changes and relate them to periods covering fluctuations in general economic conditions, rather than to calendar years. We are in a position to do this since all our data are available on a monthly basis.

The periods which may be distinguished since the time from which our analysis starts are set out in Table 1. The first period for which we have complete data runs from October 1946 to September 1947 and

TABLE 1. ANALYSIS OF ITALIAN DATA

	July 1945–Sept. 1946 15 months	Oct. 1946–Sept. 1947 12 months	Oct. 1947–Dec. 1948 15 months	Jan. 1949–June 1950 18 months	July 1950–June 1951 12 months	July 1951–Dec. 1952 18 months	1953 12 months	1954 12 months	1955 12 months
1. Ratio of the flow of funds[1] to net domestic investment		0.88	1.15	1.22	0.76	0.99	1.00	0.92	0.88
2. Ratio of increment in bank deposits to that in currency in circulation	8.5[2]	1.5	2.8	4.4	2.5	6.0	8.0	7.0	7.3
3. Ratio of increment in total deposits to that in currency in circulation	12.0[2]	1.6	3.5	6.5	3.6	7.1	10.1	8.2	8.0
4. Series 2: Cyclical deviations (trend value = 1)		0.71	1.09	1.32	0.60	1.14	1.04	1.11	0.74
5. Series 3: Cyclical deviations (trend value = 1)		0.56	0.98	1.47	0.68	1.09	1.06	1.07	0.68
6. Percentage ratio of net security issues (exclusive of investment of bank reserves) to the flow of funds[1]		22.3	31.4	39.3	31.4	30.6	36.6	44.6	41.5
7. Percentage ratio of net security issues (exclusive of all bank investments) to the flow of funds[1]		17.9	17.5	28.4	27.4	17.5	26.5	34.9	36.8

[1] The figures for the flow of funds are derived from the "detailed statement" (Table 49) by adding the second total in the last column to the first total in the second and third columns from the right.

[2] This figure, relating to a period which is otherwise outside that which we treat, is included merely to demonstrate that the figure for October 1946 to September 1947 is a low minimum.

covers a year of rapid inflation. The second is a period of mild deflation continuing up to the close of 1948. The third is "neutral"; it concludes with the outbreak of the Korean war in June 1950. It is followed by the Korean boom, which represents a second but milder inflationary period extending to June 1951. The fifth period, one of gently deflationary readaptation following the Korean boom, lasted until the autumn of 1952. From that time on, the movements in the flow of funds do not correspond to any very distinct fluctuations in the level of output and prices and we have therefore divided them simply by calendar years. We have thus two complete cycles of inflation and deflation divided and followed by neutral periods. It should be pointed out that all periods were marked by an expansion in the money supply, deflationary periods being defined with respect to price and production trends.

In order to evaluate the significance of the movements, we must of course consider them in relation to the magnitude of the total volume of bank lending and security issues outstanding. In other words, we must relate the flow of funds to the stock of financial assets outstanding at the beginning of each period. When we make this comparison, we find that the ratio of the flow of funds to the stock reaches high points during the deflationary periods and relatively low ones in the inflationary phases.

Corresponding movements are observed if we relate the flow of funds to the volume of domestic investment, either gross or net, as it is estimated in the national income statistics. The ratio of the flow of funds to net investment is shown on the first line of Table 1. It appears that an absolute minimum (0.76) was reached during the Korean boom, and that a relative minimum (0.88) was reached in the earlier inflationary period of 1946 to 1947. Over the whole period of nine years, the ratio shows a tendency to fall. The low points are mainly connected with the higher profits of industry under inflationary conditions, i.e., with the larger proportion of total investment covered by self-finance.

The relative magnitude of the elements composing the total flow of funds is subject to trend and cyclical movements. This applies to the factors influencing the money supply, to its composition, and its relation to the total flow of funds. I shall take up these various points in succession.

First, as to the factors of change in the volume of money: Central bank transactions in foreign exchange exerted a contractive influence during the two inflationary periods and a highly expansive influence during the periods of deflationary readaptation (as well as during the "neutral" period from January 1949 to June 1950). Transactions of the monetary system with the Treasury exerted at all times an expansive influence, which was stronger during the inflationary periods. The same

applies to transactions with the private sector. Central bank finance of government deficits and foreign exchange provided the base for the expansion in bank deposits and exempted the banks from substantial borrowing at the central bank.

Second, as to the distribution of the expansion in the money supply between deposits and currency: When deflationary conditions prevailed, the accumulation of foreign exchange holdings was generally associated with a faster increase in business deposits with the commercial banks and with larger investments by the banks in government securities, allowing the Treasury to reduce its use of central bank finance. (The same applies to the "neutral" period from 1949 to 1950.) As a result, the accumulation of foreign exchange was reflected only in part in increased bank deposits with the central bank, and exerted almost no influence on the note issue. In fact, at all times the expansion in the note issue followed very closely its trend line. This near absence of cyclical movements would seem to reflect the institutional limitations to changes in the income velocity of currency as well as an apparent stability of habits concerning cash holdings on the part of the nonbusiness public. During the inflationary periods, when transactions in foreign exchange exerted a contractive influence, the offsetting processes just described worked in reverse.

The greater steadiness in the development of the note issue, compared with that in deposits, is reflected in marked cyclical swings in the ratio between the two. The second line in Table 1 shows movements in the ratio of the increment in bank deposits to that in currency in circulation; and the third line shows the ratio of the increment in total deposits (including postal savings) to the increment in currency in circulation. In spite of the very sharp upward movement that is due to the trend, we notice that the two inflationary periods are marked by two clear minima (1.5 and 2.5 in the first series; 1.6 and 3.6 in the second series). It is perhaps desirable to give a word of explanation for the very high figures recorded for the fifteen months preceding October 1946. These are due to the return to the banks of the large stocks of notes previously held by various classes who had profited from the conditions of scarcity and social disintegration of the preceding period of war and foreign occupation. It is also worth pointing out that the ratios reached toward the end of the period of nine years are high, approaching much closer than during the earlier part of this period the ratios recorded in the more highly developed western countries.

The elimination of the trend movement in these two series gives the cyclical values shown as lines 4 and 5 in Table 1. Here the movement we have just referred to is still more visible, with marked negative deviations from the trend during the two inflationary periods. We should

keep in mind, in this connection, that the holdings of currency are mainly in the hands of the nonbusiness public, and that the fall in the ratio of deposits to currency during the inflationary periods doubtless reflects the comparative lack of responsiveness of this part of the public to price movements and opportunities for profit, at least so long as inflation has not reached an extreme stage. Thus the public absorbs cash in a manner which exerts a dampening influence on the inflationary process, for, by decreasing to this extent the liquidity of the banks, the public in effect lowers the coefficient of expansion applying to the funds available to the banking system at the central bank. The use of average coefficients of expansion therefore seems inappropriate in the analysis of the credit cycle, whenever currency is an important part of the money supply. I shall adopt this as my first conclusion.

The last twelve months of the period also show a negative deviation from the trend in the ratio of the increments in deposits to those in currency; this deviation is most likely due to the shift out of bank accounts and Post Office savings accounts following the reductions in the rates paid on such accounts by the Post Office after October 1953 and by the banks after the coming into force of a new cartel agreement in February 1954.

This shift was toward the capital issues market, as is shown by the last two series in Table 1. Series 6 represents the ratio of net security issues (exclusive of the investment of bank reserves) to the flow of funds. In series 7 security issues are measured exclusive of *all* bank investments. In both series a strong upward trend is noticeable and a comparison between the two, which gives an indication of the "voluntary" investments of the banks, shows that these investments are high in periods of deflation and of relatively weak demand for bank credit, and low in periods of inflationary boom. This seems to show that, in times of low demand for bank credit on the part of customers, the banks are less active in soliciting subscriptions to security issues from their customers and prefer to take up themselves increasing amounts of securities, thus contributing toward building up the volume of inactive deposits during such periods.

Taking into consideration the various facts and figures which I have mentioned, I would suggest, as a second conclusion, that cyclical deviations from trend in the volume of deposits are not as a rule positively associated with conditions of active inflation. Taking the monetary system as a whole, the counterpart of an increase in deposits is sometimes to be found in an accumulation of foreign exchange, possibly expressing an improvement in the liquidity position of an open economy as a whole. To the extent that government revenue is affected by deflationary con-

ditions and government expenditure by anticyclical policies, the increase in deposits may reflect an improvement in the liquidity position of the private sector matched by a deterioration in that of the Government, in which case the increase in deposits will be balanced by larger bank lending to the Government. It may also happen that increased deposits are the outcome of a disturbance in the normal distribution of liquidity inside the private sector, as between households, traders, and manufacturers. The disturbance may arise from reduced sales, a lower profitability of industry, and an involuntary accumulation of stocks in certain sections of the productive and distributive system. In this case the larger deposits will be met by larger advances.

I hope that some of you may find the validity of these remarks worth testing on the data of other countries.

Federal Reserve Flow-of-Funds Accounts

Ralph A. Young, Director, Division of Research and Statistics, Board of Governors of the Federal Reserve System

The rediscovery of central banking as an indispensable tool of economic policy is commonly viewed as a notable feature of the postwar epoch. Accompanying this rediscovery has been a re-examination on the part of the public of functions proper to central banking, and on the part of central banks themselves of normal operations appropriate to their functions.

This re-examination has underscored again central banking's urgent need for objective norms of reference—quantitative norms in the form of statistical statements of approximate reliability. Re-emphasizing this imperative has given fresh impulse to central bank intelligence activities and to experimental attitudes in developing new facts and organizing data into new patterns of relationship.

The Federal Reserve flow-of-funds accounts for the United States economy are the product of this postwar climate. The experimental form of the accounts needs to be explicitly stressed. The accounts must meet the pragmatic test of central bank intelligence needs. They must be adaptable to new types of data. And they must be capable of modification to provide for observed changes in the functional and institutional features of the economy. Limitations in the accounts, for any of these reasons, may give rise to minor or even major redesign of the experiment.

The experiment has had to be on a scale consistent with the complexities of the task. Both scale and complexities have made the job arduous.

The work began about ten years ago, but the developmental stage of the accounts is not yet over. The accomplishment to date is an accounting structure on an annual basis from 1939 through 1955, and we are now engaged in putting the structure in quarterly form. An interval must elapse before quarterly data can be estimated regularly. Until the accounts can be maintained on a current quarterly basis, their usefulness for central bank intelligence will be limited.

Broad objectives

What impelled the Federal Reserve to launch this quantitative experiment? What have been, and continue to be, our intelligence goals? These are simple questions, but the answers are not simple.

The United States economy has had available for some years now a vast quantity of statistical data pertaining to its varied nonfinancial as well as financial activities. These data have been systematized and summarized in a variety of indices, in various aggregates, and in such relationships as the international balance of payments, the monetary reserve elements, the input-output accounts, and the national income-product accounts.

What has not been available is a sweeping organization of data that would demonstrate the primary fact that, in a market economy, the flow of credit and money affects all activities and, in turn, all activities affect the flow of credit and money. In other words, what has been lacking in the economy's armory of information has been a single statistical panorama of both nonfinancial and financial activities—a record which would connect the money surface of things with the product surface. Such a pattern would furnish a moving picture image of the quantities that, in combination with market prices and interest rates, are generally subsumed under the term "the credit and monetary situation."

Filling this need, we felt, would throw into new perspective the many problems which must concern any money management directed toward general stability of money purchasing power and orderly economic growth. It would help, for example, to clarify contemporary money functions by distinguishing more effectively between the store of value work, exchange of wealth work, and technical work that money and credit do. It would help further to delineate the role and functions of the various financial institutions.

In addition, it would tell which economic groups purchase the current national output as well as which groups purchase existing wealth and claims to wealth. It would show where the credit or money comes from to make both output and asset purchases, and would make understandable the changes which occur in cash balance and debt positions. And it

would aid in tracing the flow of savings from surplus to deficit units, and would indicate the forms in which these savings flows occur.

Beyond this, it would reveal more plainly the relationships between current account payments and capital account payments, and would contribute to the assessment of debt positions, including the soundness of debt. It would illuminate the decision-making process, and help identify the sector source of impulses in economic expansion and contraction.

Lastly, it would assist in differentiating between instabilities caused by defects in financial organization and other instabilities resulting from psychological disturbances in single markets, which then pass through the entire economy, at times convulsively.

The objectives of the experiment, therefore, were broad, multipurpose, and fundamental. They were pursued with the main prepossession of wearers of the central banking cloth—namely, that monetary and other financial variables are vitally important determinants conditioning economic behavior and shaping economic events.

Some pragmatic considerations

The Federal Reserve staff sought a structure of data that would yield utmost flexibility of application to its own uses and to the uses of others. While monetary and financial research is a prime responsibility of a central banking system, it is also an activity of other government agencies, of universities, of financial and business institutions, and of independent scholars. A central bank, being at or close to the source of flow of much economic information, has a responsibility to make data available in well-ordered form for other users—in return for which it gets the benefit of their outside studies and criticism. Furthermore, the data supplied will make their greatest contribution if they are organized in advance with a view to general analysis rather than narrowly to monetary analysis.

In developing its flow-of-funds accounts, the Federal Reserve staff conscientiously endeavored to provide an accounting structure that would be as free as possible from ties to any doctrinaire approach or single theory of economic causation. The staff, moreover, was careful to avoid handicapping its own or any other analyst's freedom to select hypotheses for testing, or freedom to combine or correlate data in testing. This necessarily has meant maintaining a neutrality toward economic concepts whose general definition accountingwise is moot because they are subject to special tailoring in accordance with the analytic objective or problem in hand. Savings, investment, money, and liquidity are specific examples of such concepts. Data in the flow-of-funds accounts

can be combined in several ways to derive alternative measures of these concepts.

Critics may say that the Federal Reserve staff has been too purist in this effort to attain neutrality of accounting structure and data treatment. But this staff itself wants experimental latitude in defining and applying concepts, since the quest for improved or more effective quantitative norms for central banking must constantly be pressed forward in a spirit and atmosphere of unhampered research. Accounting definitions of economic concepts must freely adapt to the purpose or problem of inquiry; they cannot be permitted to express merely the hardened dictate of convention or previous official sanction.

Essence of accounts

The Federal Reserve staff is often asked to put in a nutshell just what the flow-of-funds accounts are. In simple terms, the accounts divide the nation's economic decision makers into institutionally homogeneous groups, called sectors. For each sector, the accounts show transactions in goods, assets, and credit and money in a consistently defined system of classification. Thus, each sector account identifies and measures the main sources of funds with which the sector makes payments and its principal uses of funds in making payments.

The flow-of-funds accounts closely resemble the international balance of payments statement. In international studies, we have long recognized that understanding of a nation's changing position in commerce with other nations requires the recording in a single statement of both goods, services, and gold flows, and credit and capital flows. The flow-of-funds accounts employ a comparable approach in domestic analysis.

For each institutionally distinct group within a nation, the flow-of-funds accounts provide related measures of the flows of goods and services and of credit and money. The accounts, in effect, provide a balance of payments statement for each major sector of the economy vis-à-vis the rest of the economy. The separate statements thus afford a framework for observing the changing positions of the major economic groups within the nation and the interaction of these changes with those for other sectors. The whole system of balance of payments accounts for the sector groups is simultaneously derived in accordance with standard accounting rules and hence is statistically integrated.

Relation to national income-product accounts

The following question is frequently asked about the flow-of-funds accounts: What is their relation to the national income-product accounts?

And more specifically, what is contributed by the flow-of-funds accounts that is not already provided by the income-product accounts?

Brief contrast of accounting structures. A brief contrast between the two accounting structures can serve two purposes. In the first place, it can make plain that the systems are not substitutes or competitors. They supply different views of an economy's aggregate activities. Both are needed for empiric inquiry. In the second place, a contrast can show why the accounting logic and sectoring of the two systems differ in so many respects.

The national income-product accounts are aptly described as economy performance accounts. They undertake to measure in both current and constant prices the final product available to satisfy current economic wants plus the final product utilized to provide the tools by which wants will be satisfied in the future. The product measured includes that exchanged by barter and that which is produced and consumed without passage through a market place.

The income-product accounts emphasize productive activity and the allocation of product among various types of use. Consequently, the sectors of the accounts represent types of activity—production, consumption, investment—rather than types of institutional unit. The income generated in the productive process is distributed by economic function or factor of production—worker or employee, proprietor, shareholder, or creditor.

Financial transactions, such as those in cash balances, securities, and other financial instruments, are excluded from the income-product accounts for two reasons, one strictly an accounting matter and the other a purposive matter. First, when all financial and nonfinancial transactions are consolidated into a single summary account for the total economy, borrowing and lending activities within the domestic economy must cancel out since they are necessarily equal. Accordingly, they are not recorded in the final summary accounts.

Second, measurement of the value of current product and income is an intelligence goal of prime importance in itself. Since the exchange of financial claims is not a component of the nation's current product, many students have felt that the goal of measuring output and income should not be compromised by putting these exchanges into the accounting picture. There are some who would go further and argue that financial transactions are fundamentally of a lower order of importance for use in observing and analyzing economic realities.

The flow-of-funds accounts have quite a different focus. Their purpose is to describe in current money units the total flow through markets of transactions in current product, existing assets, and financial claims. In their present form, they exclude as far as practicable barter transactions,

imputed transactions, and bookkeeping transfers among the internal accounts of single transactors, such as capital consumption allowances. The accounts show only cash and credit transactions.

The accounts are focused on the main work that credit and money do in clearing markets and on the structure of financial assets and debts remaining after such clearance. Actions in these markets are by decision-making units responding to forces growing out of a variety of past commitments and a variety of current incentives for spending or investment. Hence, the economic unit of accounting must be the individual or institution that makes decisions. Furthermore, the transaction record of the accounts must include current and capital transactions and, as a minimum, changes in financial assets and liabilities.

Thus, the sectoring or allocation of transactions is on an institutional rather than an activity basis. Financial institutions, divided into as many subgroups as are deemed appropriate, are an essential feature of the account sectoring. The transactions classification is pragmatic, that is to say, transactions are grouped into categories that appear to be meaningful in terms of market processes.

The user of the flow-of-funds accounts is obliged to recognize that activity in markets is the outcome of decisions by many different individuals and institutions acting as economic units. The behavior of each unit must be observed through all of the transactions in which it may engage. For summary observation, their total behavior must be analyzed in the same manner. Stated another way, the meaning of a given group's cash balance, liquidity, debt, or savings and investment position, however defined, cannot be adequately analyzed without reference to the group's total receipts and expenditures, their composition, and other associated financing as reflected in asset and liability changes. Similarly, nonfinancial transactions must be studied in relation to each group's financial position and activities. This is general equilibrium analysis in empiric form, and central banking must engage in such analysis to achieve its key intelligence need—a balanced objective view of the entire credit and monetary situation.

Examples of contrasting accounting treatment. The differences between national income-product accounts and the flow-of-funds accounts may be further clarified by a few examples of contrasting treatment.

The income-product accounts, for instance, record in separate activity accounts transactions for current consumption and transactions ordinarily thought of as investment in tangible assets. Thus, consumers' purchases of homes are taken into the same account as landlords' purchases of rental housing and business purchases of new plant and equipment. But in the flow-of-funds accounts these several transactions are

recorded in at least three sectors: the consumer sector, the unincorporated business sector, and the corporate business sector.

The reasoning behind this institutional sectoring is to be found in the main purposes of the accounts, namely, to understand the interplay and interaction of market transactions by major groups of decision-making units. The purchase, say, of a home by a consumer household is influenced by factors recorded in the accounts, such as the amounts spent for current living, the receipts margin over current living, the cash and other financial balances previously set aside and on hand, and the amount of debt and debt service for which obligations have already been assumed. The home purchase decision is also influenced by factors external to the accounts, such as the cost and availability of home mortgage credit and the home purchase price. The market process for home purchases, or any other market process for that matter, may not be realistically summarized or seen empirically except in these terms.

There are other aspects of home ownership that bring out the difference in accounting rule applicable to the two systems of accounts. In the income-product accounts, the costs of home maintenance are recorded as an expenditure of the business sector; an imputed rental payment is recorded in personal consumption expenditures; and the excess of this imputed rental over costs of maintenance and depreciation is recorded in the personal income account. Since financial flows are excluded from the accounts, neither the incurrence of a mortgage nor the repayment of mortgage debt would be recorded anywhere. In the flow-of-funds accounts, imputed rents are excluded from the entries, but actual payments on home maintenance and debt service, as well as the net change in mortgage debt, are entered in the consumer sector account along with all other receipts and payments.

Another illustration of contrast between the two systems of accounts is in the treatment of unincorporated business establishments. The logic of the income-product accounts does not require a separate treatment of these units in special sectors. In the flow-of-funds accounts, a distinction between unincorporated and incorporated business is adhered to on institutional grounds, because the legal form of organization affects financial patterns of business and access to financial markets. And the financial patterns and decision making of the farm business are unique to that activity, so that incorporated and unincorporated farms are grouped together in a special farm business sector.

A final difference to be mentioned is one already underscored—the income-product accounts have no sector for financial institutions, whereas the flow-of-funds accounts have several such sectors. The flow-of-funds accounts are designed to throw light on financial as well as nonfinancial transactions. Since financial transactions are the primary

function of financial institutions, their separate sectoring and subsectoring must be provided for to express this broader perspective.

An illustrative application, 1953–55

The Federal Reserve flow-of-funds accounts for the United States were first published in December 1955. Their wealth of detail has overwhelmed not a few consumers of statistical information. These consumers have asked: Can this rich quantitative record be put to work? Or is it mainly useful as a directory of statistical numbers—a sort of telephone directory?

Getting data organized and ready for analysis and applying them in analysis are successive steps in a research process. The accounts, as emphasized earlier, are constructed with general purpose objectives. Also, as emphasized earlier, application to many analytical problems thus far has been handicapped by the unavailability of the accounts on a quarterly basis. But some progress in this direction has been made. Using the preliminary quarterly data at hand, we will apply the accounts to a special purpose—a picturing of the credit and monetary situation in the United States over the years 1953–55, an interval marked by recession and recovery.

The illustration must necessarily be condensed and incomplete. A full explanation of the combinations of data employed must be reserved for footnotes to the charts presented, but every effort has been made to identify the curves in a self-explanatory way. One point of simplification may be mentioned in advance. The terms "credit" and "credit markets" are used to cover transactions in both debt and equity instruments.

Chart 1 portrays the total amount of funds—both debt and equity—raised in United States credit markets in each quarter of this three-year period. Note, first, the clear upward drift of financing demands, so that financing activity in the recovery months of 1955 moved above levels reached in the peak period of the preceding cycle. Note, secondly, the wide seasonal swing in financing activity. These wide movements highlight one of the principal, but little commented on, tasks of central banking operations, namely, that of moderating the market impact of fluctuations in credit demand within the year, caused by the seasonal swings in financing needs of consumers, business, agriculture, and government. They also suggest the complexities of the credit market problem when a cyclical upsurge in financing demand coincides with a peak in seasonal financing demand.

In Chart 2, total funds advanced during the years covered are shown, together with a subdivision of the total into commercial banking and other sources. Here, the savings and time deposits of commercial banks

CHART 1. FUNDS RAISED IN MARKETS

(In billions of U.S. dollars)

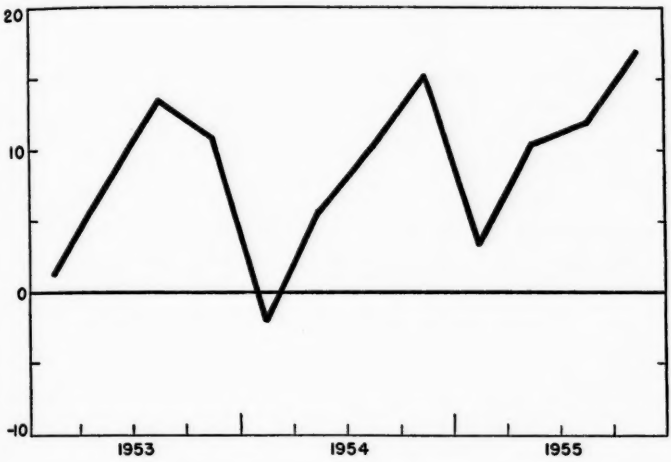
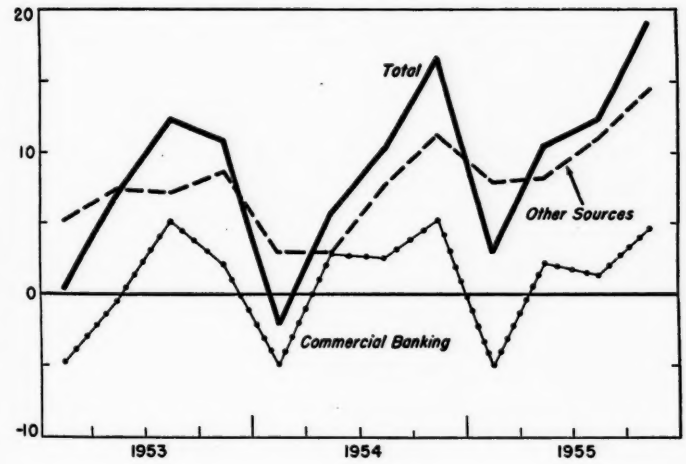


CHART 2. FUNDS ADVANCED IN MARKETS

(In billions of U.S. dollars)

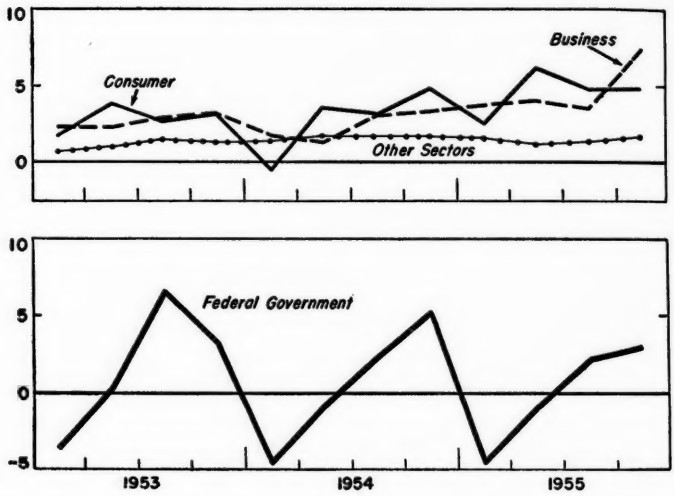


are grouped with other sources. The picture emphasizes the role that commercial bank activity plays in absorbing seasonal increases and decreases in financing demand. It also brings out the increasing importance during the 1954–55 recovery period of sources of funds other than commercial banking.

We must now look behind these totals to see what groups were taking and what groups were supplying funds. Chart 3 shows that the most volatile part of the demand for financing stems from the Federal Govern-

CHART 3. FUNDS RAISED, BY SECTOR

(In billions of U.S. dollars)



ment. Seasonal swings in financing demands are dominated by those of the Federal Government. Behind this wide seasonal movement is the heavy concentration of personal and corporate income tax receipts in the first half of the year. One point of interest before leaving this chart is the gradual dampening of Federal Government financing demands over this short period. Government expenditures were cut in the early part of the period, and tax and other receipts rose in the latter part. Thus, as upswing in activity progressed, fiscal policy played an increasing countercyclical role.

Chart 3 also brings out that consumer and business demands for financing were of about the same order of magnitude over this period,

a fact no doubt surprising to many. Also, these two sources of demand accounted for most of the slackening of total demand in the 1953–54 recession and all of the increase in total demand which occurred during the recovery phase. The volume of funds raised by other sectors, mainly state and local governments, showed more seasonal and cyclical stability over the entire period. The volatility shown by consumer financing merits further attention.

The changing financial position of consumers during the period is traced on Chart 4, which shows the consumers' surplus of funds on current account, their outlays for purchasing new homes and durable goods, the total of their funds advanced or lent to other sectors, and their borrowing. On the whole, consumer capital outlays were well maintained during the 1953–54 recession, with financing from their own funds displacing borrowing to an appreciable extent in one phase of the downdrift. Consumer capital outlays expanded sharply in the fourth quarter of 1954, and remained high during 1955. In this period, the difference between the current surplus and capital outlays narrowed markedly. The accompanying pressures on consumer resources are evidenced by the narrowing margin between funds advanced and funds borrowed.

Consumer borrowing is mainly for the purpose of financing capital outlays, so that a tolerably close correspondence in movement might be

CHART 4. CONSUMER SECTOR: SOURCES AND USES OF FUNDS

(In billions of U.S. dollars)

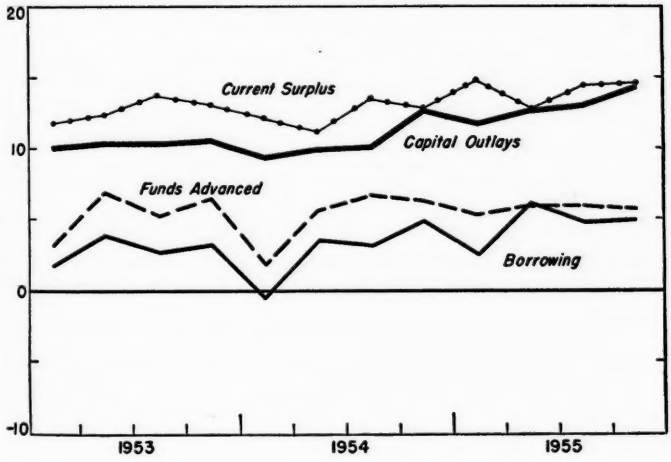
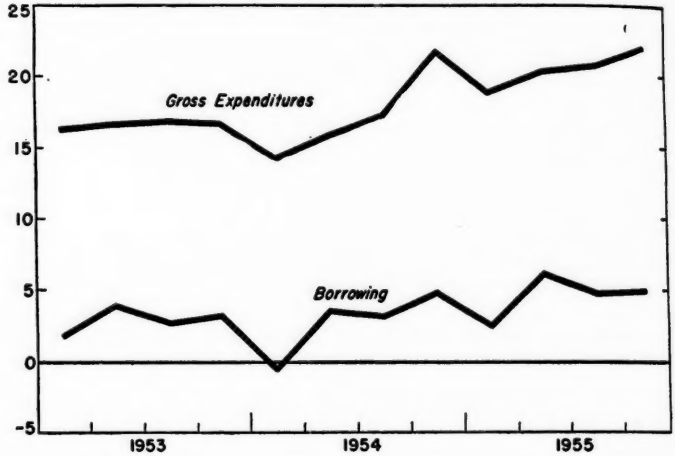


CHART 5. GROSS CAPITAL OUTLAYS: CONSUMER SECTOR

(In billions of U.S. dollars)



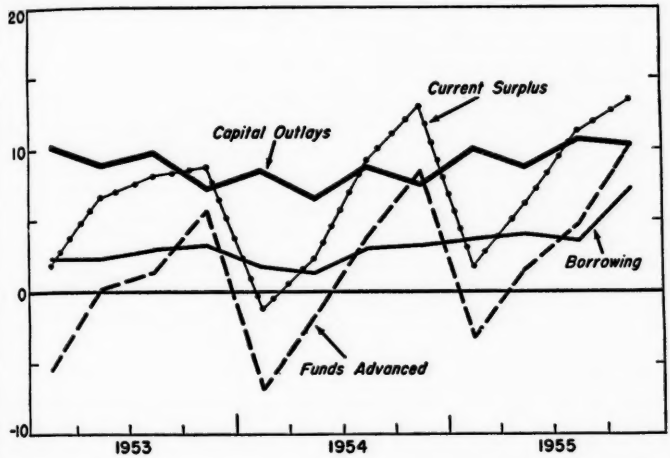
expected in the consumer capital outlay curve and the consumer borrowing curve. The dissimilarity in movement of the curves is, therefore, rather striking. However, if one adds to capital outlays the purchases of used durable goods and used houses, as in Chart 5, the pattern of movement of the two series becomes somewhat closer.

To show the shifting pattern of business finance, Chart 6 presents a condensed flow-of-funds picture for all business combined. The surplus on current account of the business sectors, calculated here after income tax payments, naturally shows sharp seasonal swings because of the tax payment schedule. Similar seasonal swings are shown in business funds advanced to other sectors, principally because business accumulates securities to provide for tax payments and then liquidates the securities to pay taxes.

Capital outlays and borrowing are of particular interest in Chart 6. Business capital outlays declined irregularly over the recession quarters and increased in 1955 but not to levels much above those of the preceding cyclical peak. As capital outlays decreased, borrowing first moved up and then went down. As an uptrend in capital outlays followed through 1955, borrowing rose. In the last quarter of 1955, business borrowing increased sharply, accompanying a bulge not in capital outlays but in funds advanced. This bulge in funds advanced reflected in part provision

CHART 6. BUSINESS SECTORS: SOURCES AND USES OF FUNDS

(In billions of U.S. dollars)



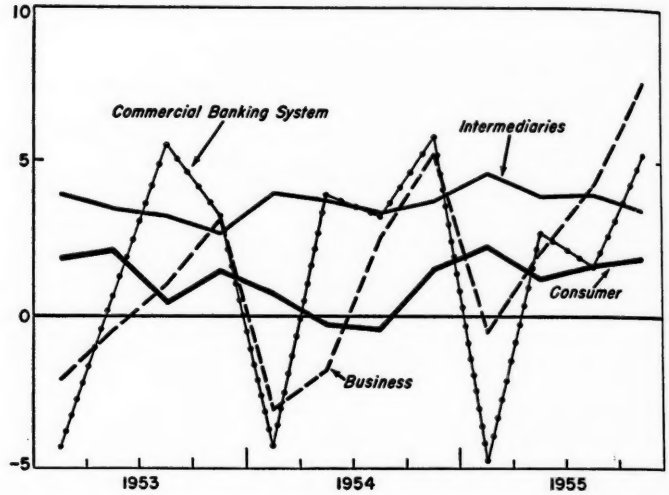
for taxes at rising levels of earnings, in part larger financing by the business sector of consumer capital outlays, and in part intrasector extension of trade credit.

So much for the demand side of the financing picture over the 1953–55 period. Let us look more closely into the supply side. Measures of the funds advanced directly to the credit markets are presented in Chart 7. The amounts traced are the net lending by major sectors through the debt and equity instruments issued by nonfinancial sectors. Wide seasonal swings are shown for the funds supplied by business and by commercial banks, and an upward trend marks the business lending curve. The volume of funds supplied by financial intermediaries—savings banks, insurance companies, savings and loan associations, credit unions, investment trusts, and pension funds—remained remarkably constant over the period. Funds supplied by consumers decreased from mid-1953 to the third quarter of 1954, and then, with business recovery in 1955, rose to about the level of the preceding cyclical high.

As Chart 8 shows, the direct advance of funds to the credit and capital markets is not the only supply contribution made by consumers. They also contribute indirectly by adding to cash balances and by channeling funds through financial intermediaries through deposits and shares in savings institutions and net premium payments to life insurance com-

CHART 7. FUNDS ADVANCED IN MARKETS, BY SECTOR

(In billions of U.S. dollars)



panies. Their advances to intermediaries were relatively stable, but their holdings of cash showed considerable variation, declining during the first phase of recession and increasing appreciably during the late phase of recession and early phase of recovery. After decreasing as recovery gained full swing, consumers' cash balances showed little change in 1955. Many of these changes in consumers' cash balances were inverse to the changes in their holdings of government securities.

For business, in contrast, as Chart 9 illustrates, direct advances and changes in holdings of cash have moved together over this period. Beginning in mid-1954, however, business held more of its liquidity in securities, notably short-term government securities, than in cash—a development related to the rise in market interest rates accompanying the recovery movement.

The changing composition of funds advanced by all nonfinancial sectors together is pictured in Chart 10. Through this cycle in demands for financing, the flow of funds made available to nonbank financial intermediaries was remarkably stable. Response to both seasonal and cyclical fluctuations in demand for funds was primarily through changes in direct lending among nonfinancial sectors and in their cash balances. The heavy demand for funds which developed as spending activity

CHART 8. CONSUMER SECTOR: FUNDS ADVANCED
(*In billions of U.S. dollars*)

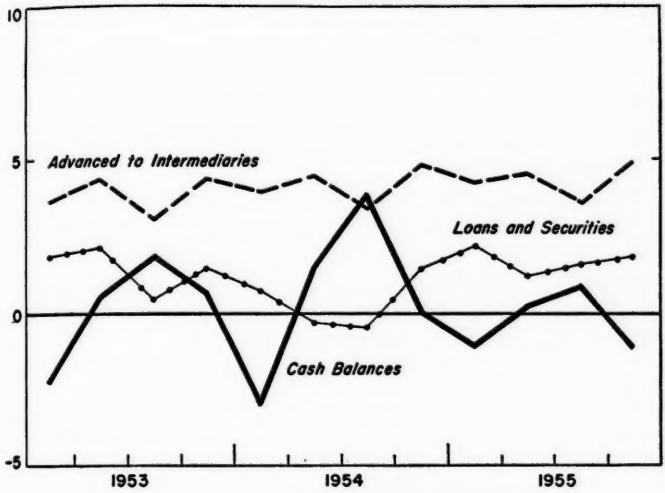


CHART 9. BUSINESS SECTORS: FUNDS ADVANCED
(*In billions of U.S. dollars*)

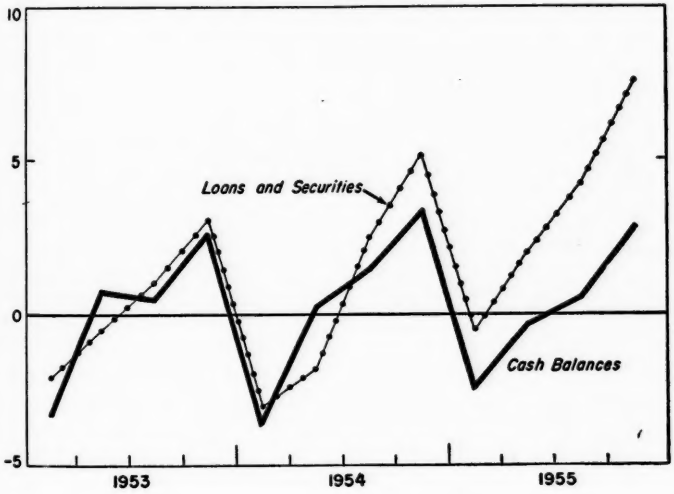
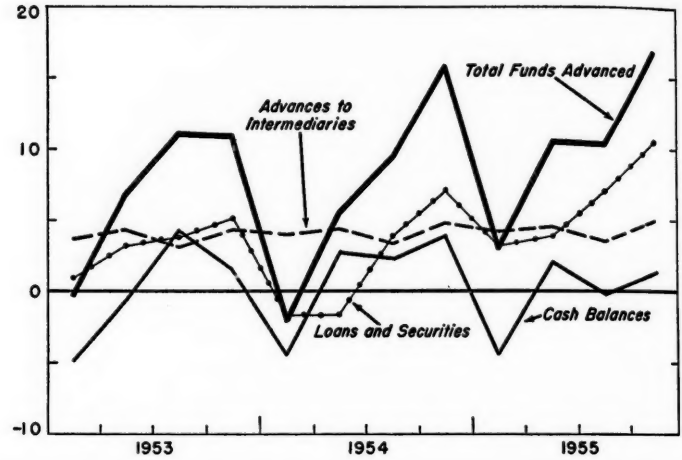


CHART 10. NONFINANCIAL SECTORS: FUNDS ADVANCED
(*In billions of U.S. dollars*)



increased in late 1954 and in 1955 was met to a large extent by direct lending on the part of the nonfinancial sectors and by more active use of cash balances.

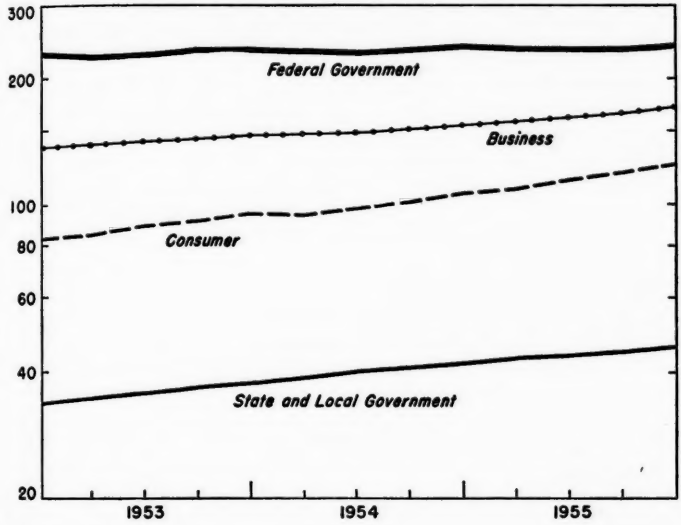
These charts have shown the wide quarterly fluctuations in borrowing and lending activities. The concluding chart, Chart 11, puts the quarterly flows of debt instruments in the perspective of the total of public and private debt outstanding. The main point to be observed is that consumer debt showed the most rapid rate of growth in this period. The debt of state and local governments also grew steadily and rapidly. Business debt rose more slowly through most of the period, but the rate of increase accelerated in the second half of 1955. The stability of federal debt over this period kept the rise in financing demands from other sectors from pressing unduly against the available supply of savings.

This all too sketchy image of the shifting credit and monetary situation over an important fragment of recent history illustrates alternative responses that each of the major groups can make to changing pressures in financial markets and in their own financial positions. It is this diversity of response pattern that makes research for policy purposes complex and makes risky any generalization on merely a few elements in the economy.

At the outset, we stated that the single objective of this graphic presentation was to offer an experimental example of the analytic utility

CHART 11. TOTAL DEBT, BY SECTOR

(In billions of U.S. dollars; logarithmic vertical scale)



of the flow-of-funds accounts. If the combinations of data shown in the charts have been suggestive, they will have served their purpose.

CONCLUDING OBSERVATIONS

The need to construct a statistical bridge between the money surface of things and the product surface is one felt by economic observers in other countries as well as in the United States. Some have undertaken to meet the need by resectoring the income-product accounts and by adding, to the derived transactions record, measurements by sectors of exchanges of existing assets, transfers of claims to wealth, and changes in debtor-creditor positions. These undertakings have obviously been in the same direction as, and have a close family relationship to, the Federal Reserve flow-of-funds accounts.

The difference between them and the flow-of-funds accounts is partly a matter of approach and partly a difference in scale of experiment. Our own experimental drives led us to undertake a comprehensive rearrangement, reallocation, and supplementation of the income-product accounts so that a panoramic view of market processes within a single accounting

framework could be achieved. This departure from the limitations of existing accounting structures represents, in fact, a central contribution of the flow-of-funds accounts. Admittedly, some qualified observers will say that the strangeness and complexity of the new accounting structure is too high a price to pay for this contribution.

Any rearrangement of data to achieve a general observational view involves difficult, at times delicately balanced, choices as to the stratification of data. The choices made by the Federal Reserve staff are at many points tentative and open to dispute. We do not urge these choices upon other statistical workers as the only reasonable solutions. But statistical workers in other countries should be urged to bridge the statistical record of the money surface of things and the product surface. Such a bridging obviously has to be done with a special eye to the distinctive institutional features of a particular economy. And it must be accomplished within the limitations of available data.

We can all learn much from one another's experimental endeavors along these lines. But at this stage of intelligence, progress in the national accounting arts can be severely handicapped by standardizing the measurement of payments too quickly with a view to international comparability. It is not so important that we observe relations within the different economies on the basis of a uniform accounting pattern. But it is important that new analytic tools are developed which are effective in serving the vital need, recognized in all countries, of bridging the gap between money activities and product activities so that monetary and other stabilization policies are determined with as much public understanding as possible.

Notes to charts

The time series presented in these charts are special groupings of quarterly flow-of-funds data, and the following notes describe the groupings in terms of flow-of-funds sectors and transaction categories. The sectors and transaction categories themselves are explained in detail in *Flow of Funds in the United States, 1939–53* (Board of Governors of the Federal Reserve System, 1955).

A general point to be made here is that the term "net change" in financial assets and liabilities in these notes refers to net flow—the excess of asset purchases or of borrowing over receipts from sale of assets or from retirement of debt. Capital gains and losses from changes in valuation of assets and liabilities are not included in either the data or the term "net change" as used here. It should also be stated that, for convenience of statement in the notes, the words "liability," "claim," and "borrowing" cover equity shares in corporations as well as debt instruments.

Sector groupings in charts

Commercial banking system covers all commercial banks, the Federal Reserve System, and Treasury monetary funds.

Financial intermediaries consists of mutual savings banks and the Postal Savings System, life insurance companies, self-administered pension plans, savings

and loan associations, credit unions, investment trusts, and other miscellaneous financial institutions.

Business is the combined total of the corporate, nonfarm noncorporate, and farm business sectors of the flow-of-funds system.

Consumer and *Federal Government* are the two flow-of-funds sectors described in the *Flow of Funds* report.

Other sectors is the state and local governments sector and the rest of the world sector.

Nonfinancial sectors refers to all sectors except bank and financial intermediaries as described above.

Transaction groupings in charts

Chart 1. FUNDS RAISED IN MARKETS—the net change in liabilities of all nonfinancial sectors combined. The financial instruments covered are federal obligations, state and local obligations, corporate debt and equity securities, mortgages, consumer credit and other trade debt, and miscellaneous liabilities of the nonfinancial sectors. Trade debt as reflected in these charts is net trade debt owed by nonbusiness sectors to the business sectors.

Chart 2. FUNDS ADVANCED IN MARKETS—funds advanced to the nonfinancial sectors (the same group of financial instruments as "funds raised" but from the asset rather than liability point of view). *Commercial banking*—an estimate of net funds advanced through the commercial banking operations of the banking system as distinguished from its savings deposit operations; it is measured by total change in bank credit less change in time and savings deposits. *Other sources*—all other advances to nonfinancial sectors; it covers funds advanced by financial intermediaries, those available through the savings deposit operations of banks, and funds advanced through direct lending and purchases of securities by investors in the nonfinancial sectors.

Chart 3. FUNDS RAISED, BY SECTOR—distribution by debtor sector of total funds raised in markets (Chart 1).

Chart 4. CONSUMER SECTOR: SOURCES AND USES OF FUNDS—condensation of the flow-of-funds consumer sector statement. *Current surplus*—excess of current nonfinancial receipts over current nonfinancial expenditures, that is, the net of all nonfinancial transactions other than purchases and sales of tangible capital assets (homes and consumer durable goods) and premium and benefit payments in connection with private life insurance, annuity, and pension programs. *Capital outlays*—purchases of homes and durable goods less proceeds from sales of such assets. *Funds advanced*—net changes in consumer holdings of financial assets and growth in equity in assets of life insurance companies and private pension programs. *Borrowing*—net changes in total consumer liabilities, i.e., mortgages, consumer credit, security loans, and policy loans.

Chart 5. GROSS CAPITAL OUTLAYS: CONSUMER SECTOR. *Gross expenditures*—purchases of new and used homes and durable goods. The series differs from the capital outlays shown in Chart 4 in that the latter is net of consumer sales of used homes and used durable goods. *Borrowing*—the same series as in Chart 4.

Chart 6. BUSINESS SECTORS: SOURCES AND USES OF FUNDS—a condensation and rearrangement of the combined statements of the three flow-of-funds business sectors. *Current surplus*—excess of total nonfinancial receipts over nonfinancial payments (including tax payments) in current accounts; it covers all nonfinancial transactions except purchases and sales of tangible capital assets. *Capital outlays*—purchases of tangible assets; it includes gross expenditures on plant and equipment and net change in inventories. *Funds advanced*—changes in holdings of cash, securities, and receivables net of payables. *Borrowing*—net change in all liabilities other than trade payables.

Chart 7. FUNDS ADVANCED IN MARKETS, BY SECTOR—distribution of total funds advanced (Chart 2) by sector group advancing funds.

Chart 8. CONSUMER SECTOR: FUNDS ADVANCED—distribution by type of asset of the total funds advanced by consumers (Chart 4). *Cash balances*—changes in

holdings of currency and demand deposits on a holder-record basis. *Advanced to intermediaries*—net changes in consumer holdings of time and savings deposits in banks, shares in savings and loan associations and credit unions, net flows to investment trusts, growth in equity in private life insurance and pension programs. *Loans and securities*—changes in all other consumer financial assets, mainly government and corporate securities and mortgages.

Chart 9. Business Sectors: Funds Advanced—distribution by type of asset of total funds advanced by business sectors (Chart 6). *Cash balances*—changes in currency and bank deposit assets of business on holder-record basis. *Loans and securities*—changes in all other financial assets, including trade receivables net of trade payables.

Chart 10. Nonfinancial Sectors: Funds Advanced—net change during each period in the total financial assets of the nonfinancial sectors and the net premiums under private life insurance and pension programs distributed by type of asset. The types of advance are described in the above notes for Charts 8 and 9. The total here is closely related to the earlier series on funds advanced in credit markets (Chart 2) but differs from it in that it includes advances to banks and financial intermediaries rather than from them. The numerical difference between this total and the earlier total arises from gold flows, changes in cash balances held by financial intermediaries, changes in bank capital accounts, and changes in the currency and deposit float.

Chart 11. Total Debt, by Sector—total debt outstanding of each of the sector groups shown. The business debt series does not include corporate equity securities, tax liabilities, or business trade payables (netted against trade receivables in this presentation).

Monetary Analyses

Earl Hicks*

The compilation of financial data for analyzing monetary problems and for the evolution of monetary policy has received widespread attention in recent years. Statements for these purposes, which may be called Monetary Analyses, are now prepared by a large number of central banks and other national authorities. In the Appendix to this paper, 58 analyses prepared by 41 countries are published and described; of these 58 analyses, 16 were published in their present form for the first time in 1955 or 1956. Some of the general questions of methodology raised by these statements may usefully be discussed here, by pointing out their similarities and contrasts.

The statements may be discussed as a group because they have in common the use for monetary statistics of the principle of sector statistics. The economy is composed of several groups playing different roles and reacting differently to economic conditions. Social accounting, of

* Mr. Hicks, Assistant Director of the Research and Statistics Department, was formerly with the Division of Monetary Research of the U.S. Treasury and previous to that with the Federal Reserve Bank of Atlanta.

which Monetary Analyses are a part, has been developed by compiling statistics that will measure transactions of and transactions between the several sectors—government, business, consumers, rest of the world, etc. Like the national income accounts, Monetary Analyses are made by dividing the economy into sectors. National income accounts measure the income of the sectors and the expenditure transactions between them, concluding with measures of each sector's savings and each sector's real investment expenditures. National income accounts do not explain how the sector's deficits or surpluses were financed, and they tell nothing about money and the role of banks. Monetary Analyses measure either the borrowing and lending transactions of or between the sectors, or the amounts of each sector's financial assets and liabilities. While Monetary Analyses have as a common basis the principle of sector statistics, there are wide differences among them, arising in part from the fact that the two financial questions left unanswered by the national income accounts cannot easily be answered in a single analysis. There is a conflict between the two primary purposes of Monetary Analyses: the measurement of intersector finance and the measurement and analysis of liquidity.

Sector statistics of either borrowing and lending or financial assets and liabilities would provide a matrix useful for the study of intersector finance. If some distinctions by type of lending or borrowing or by type of financial asset or liability were introduced, the matrix would also be useful for the study of the ownership of liquid assets and the causes of change in the volume of liquid assets. The available Monetary Analyses are such matrices, or parts of such matrices, and they serve in varying degrees both of these purposes.

Those Monetary Analyses which are addressed primarily to the study of the origins of liquidity may be called liquidity analyses. Most of them are derived from the asset and liability accounts of the institutions whose liabilities constitute liquid assets, and they are obtained by classifying the assets by the economic sectors indebted to the institutions, and the liabilities by the degree of their liquidity. The accounts of the institutions are almost always consolidated accounts, so that no question of intra-sector claims arises. The differences between the available statements of this type arise from differences in the selection of the liabilities to be "explained" and in the way in which "nonmonetary" liabilities of the institutions whose accounts are analyzed are handled. Because they are based on the accounts of only the money and banking system, or these plus the accounts of other financial institutions, they are necessarily incomplete matrices.

Those analyses which are complete matrices may be called intersector

finance statistics. They could be matrices of intersector borrowings and lendings, i.e., transaction statistics measuring "who lent to whom" and "who borrowed from whom," or they could be matrices of intersector financial assets and liabilities, i.e., statistics of claims, or changes in claims, measuring "who holds claims on whom," and "who is indebted to whom." The two matrices are not the same because one form of borrowing and lending is the transfer of marketable obligations of third parties. In either case, the data could be net or gross, i.e., the lendings of one sector to another (or its holdings of claims on the other) could be offset against its borrowings from the other (or against the other's holdings of its obligations), or the two gross entries could be shown. In either case the entries could include intrasector relations or they could refer only to intersector relations. In either case they could show identical amounts in each related pair of cells, i.e., A's lending to or claim on B could be shown as exactly equal to B's borrowing from or debt to A, or, if data were available from the books of both A and B and should differ owing to problems of timing, valuation, and methods of bookkeeping, the pairs of entries could be permitted to differ so that each would be on an "own record" basis. In either case they could provide classifications for the major items in liquidity analyses, or they could include only a single entry for the relationships between any two sectors.

In all of the available statements made in the form of complete matrices, the data are data on financial assets and liabilities rather than data on lendings and borrowings. In most of them, the data are given as gross entries. In most the amounts shown in the paired cells are equal. In most the classifications are given for the major items of liquidity analysis. There are, however, many differences between the available intersector finance statements, because of differences in the ways in which the problems of relationship to the national income accounts have been resolved and of differences in the extent to which liquidity aspects have been sacrificed in the interests of a complete matrix.

In a sufficiently large matrix with subclassifications for types of asset and liability, both of these aspects of financial statistics could find expression, and both of the purposes for which Monetary Analyses are useful could be served. But the function of Monetary Analyses is also to consolidate the data in the interests of comprehensibility. In the process of such consolidation, the two purposes come into conflict: the sum of all intersector borrowings and lendings is zero, and its change from period to period is zero; the total of the community's liquidity, however, is a positive and significant economic fact and its period-to-period change may be large and of great significance. In financing statistics, a financial asset offsets a liability; in liquidity analyses, a financial asset explains

the origin of a liability. In financing statistics, the monetary system can be pictured as a "financial intermediary" as it is in national income statistics; in liquidity statistics, the monetary system is the essential element in the process of expansion or contraction.

Liquidity Analyses—Money and Banking Statistics

Money and banking statistics are the first source of Monetary Analyses. The money and banking system clearly plays a unique role in finance, not only because its financing transactions are large compared with the total of all intersector financing transactions, but also because the wide acceptability of its liabilities enables it to finance sector deficits that would not be financed directly by the other sectors. The accounts of the money and banking system are therefore the source of statistics on the supply of liquid assets and the source of statistics of a very important sector in intersector finance.

Monetary Analyses have been made from the accounts of the money and banking system in a large number of countries and in a number of different ways. Some analyses undertake to account for the liquidity-creating potential of the system; others undertake to account for the liquidity creations of the system. The first are analyses of actual or potential bank reserves; the second are analyses of money or of money and its close substitutes.

Analyses of reserve money

Analyses of bank reserves have been made for many years. In many countries, the central bank balance sheet alone constitutes such an analysis; in others, the treasury gold and foreign exchange accounts and currency issue also have to be included. The logic of such statements is, ordinarily, that increases in gold and foreign exchange reserves automatically create reserve money, and that increases in the public's holdings of currency automatically absorb it. Hence the other accounts of the monetary authorities show the extent to which the central bank did or did not offset these forces so as to cause or prevent a change in bank reserves.

In Denmark and Sweden, where the central banks perform all the functions of the monetary authority, the central bank accounts alone are analyzed to "explain" the origin of reserve money, i.e., currency plus bankers' deposits at the central bank. In the United States and the Federal Republic of Germany, the accounts of the various parts of the monetary authority are consolidated to "explain" the origins of bank reserves. This is the same as the analysis of reserve money, except that

private sector holdings of currency are included as a negative element in the "explanation" rather than as a positive element in the figure "explained."

The Norwegian statement is made on the premise that treasury bills are also bank reserves. It analyzes the origins of changes in currency, bankers' deposits at the Bank of Norway, and treasury bills in the hands of banks or the private sector. Treasury bills are included in the analysis by consolidating government accounts with the accounts of the Bank of Norway. The statement obtained is used to calculate the effects of government and central bank operations on the "liquidity" of banks and the private sector. The Government's cash deficit (or surplus) minus (or plus) its borrowings in forms other than treasury bills is its contribution to (or absorption of) liquidity. This, together with changes in Bank of Norway assets other than treasury bills, accounts for changes in bank and private sector holdings of currency, Bank of Norway deposits, and treasury bills. Denmark calculates a similar total of currency, bankers' deposits at the National Bank, and treasury bills outstanding, but provides no analysis of the total.

Australia analyzes changes in commercial bank deposits rather than changes in the ability of the commercial banks to create deposits. The Australian statement may nevertheless be mentioned here since it is related in its objective to the analyses of reserve money. It analyzes the end-effect of reserve money rather than the amount of reserves or reserve money.

Analyses of money

Analyses of money are made in a large number of countries, with some differences in the selection of the items to be called money, with differences in the way in which nonmonetary liabilities of the monetary system are accounted for, and with differences in the meaning given to indebtedness to the banking system.

The share of the money and banking system in all borrowing and lending is so large in all countries that the classification of the accounts of the money and banking sector can provide much information on the borrowing and lending of the other sectors. Indeed, in the less developed countries, bank holdings of claims on the other sectors are in some cases good indicators of the total indebtedness of those other sectors. Also, the accounts of the money and banking system are more easily available than those of most of the other sectors and are more likely to be accurate. For all of these reasons, monetary statistics in almost all countries of the world have been recast in recent years into data analyzing the

assets of the monetary system by the economic sectors indebted to the system. Accounts made in this way are given for 47 countries in *International Financial Statistics* (*IFS*).

The sectoring in the analyses based on the accounts of the money and banking system is not complete, however. The accounts of the banks and the monetary system do not divide the system's liabilities to, or claims on, the private sector between business and consumers. This omission in the information available from banking statistics is perhaps the most important limitation on the usefulness of all money and banking statistics.

In Greece, the accounts of the Bank of Greece are analyzed to explain the origin of currency. Bankers' deposits at the Bank of Greece are included as a negative entry in the "explanation" rather than in the item to be "explained." The purpose is to study the origins of money rather than the origins of actual or potential bank reserves, and the analysis is limited to currency because deposits are not considered to be money.

Most countries include demand deposits in the definition of money, and many produce analyses of money so defined from the consolidated accounts of the whole money and banking system. This procedure raises a difficulty that does not arise in most cases when the accounts of the monetary authorities alone are analyzed. The banks that create deposit money also have other liabilities. These liabilities can be reported along with money in the liability side of the statement, with the result that there is no unique analysis of the causes of change in money; or the liabilities can be netted against selected assets (foreign liabilities against foreign assets; government deposits against loans to the government; and nonmonetary deposits against loans to the private sector), with the result that the changes in money supply can be said to have been "caused" by the changes in the remaining items on the asset side.

Net figures are used to the greatest extent in the accounts of a number of Latin American countries.[1] By netting out all other liabilities, the money supply of these countries is allocated to two categories of asset: net foreign assets and net domestic assets, an amount equal to the first being described as "money of foreign origin" and the remainder as "money of domestic origin." In most statements, the latter category is further subdivided into net credits to governments and net credits to the private sector.

Apart from the netting involved (of which that of nonmonetary deposits against loans to the private sector is probably the most open to question), the allocation of money according to "origin" is in principle

[1] Brazil, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Peru.

identical with a distribution of assets and liabilities by economic sectors. The manner of presentation originated in 1946, in order to draw particular attention to the origin of the large increases in the money supply of Latin American countries which were associated with wartime export surpluses. The same categories have continued to be used since and, insofar as they are clearly related to assets and liabilities by economic sectors, have continued to be useful. But there may be some risk that the netting and the nomenclature used may lead to wrong inferences. Foreign assets ("money of external origin") may change owing to internal as well as to external causes; the name should not predispose toward an analysis which recognizes only foreign causes of balance of payments deficits. Also, the connection between the two "types" of money should not be overlooked: the creation of "money of internal origin" (i.e., internal credit expansion) may lead to a reduction of "money of external origin" rather than to an increase in the money supply.

Most of the analyses of money resolve the problem of the nonmonetary liabilities of the banks by including them as a negative entry in the analysis, thus making the shifts from monetary to nonmonetary deposits an offset to increases in any of the assets of the money and banking system rather than an offset to increases in only one of these assets. The Belgian statement and the *IFS* monetary survey accounts report nonmonetary liabilities as positive entries on the liability side of the statement and may be said to provide an analysis of money plus quasi money rather than an analysis of money. Statements like those of the United States, Germany, and Indonesia, given in the form of a consolidated balance sheet of the money and banking system, may be said to have a similar solution for the problem of nonmonetary liabilities.

A second difficulty with the sector analysis of the origins of money is that the accounts of banks normally record assets by their original obligors rather than by their previous holders. Hence private sector sales of government bonds to the banks appear in the statistics as increases in bank loans to the government, and other transactions in existing financial assets between the banks and others attribute the resulting inflationary pressure to the sector whose obligations are bought rather than to the sector that borrowed. All Monetary Analyses derived from asset and liability data (and this means all the statements in the Appendix to this paper) imply this explanation of inflationary pressure. If the accounts of the banks are accompanied by the accounts of the other sectors so that a complete matrix is provided, the measurements of "who lent" and "who borrowed" supplied by the row and column totals would be correct. With this information given in the row and column totals, it would be more useful to record in the cells "who holds claims on whom" rather than "who lent to whom." But analyses of money are incomplete

matrices. They fill only those cells of the matrix that involve transactions between the monetary system and others. There are no row and column totals to measure "who lent" and "who borrowed." The data suggest that measurements of "who lent" and "who borrowed" may be derived from the figures on who borrowed from the banks, but owing to the problem of purchases from third parties, the cell entries do not measure "who borrowed from the banks."

The Belgian statement and the statement of the Netherlands Bank avoid the problem by setting up a "capital market and sundry items" sector. Bank purchases of outstanding securities are recorded as purchases from that sector. This solution permits the user to read the data as measures of who borrowed from the banks, but does so at the cost of not classifying all bank transactions. So far as is known, no country reports bank assets by previous holder.

The incompleteness of the data also is responsible for a third difficulty in the sector analysis of the origins of money. The borrowings of the sectors as measured from the accounts of the banking system are incomplete. Hence by attributing increases in money supply to the increases in sector borrowings from the banks, the origins of monetary expansion are traced to the sectors that happened to borrow from the banks rather than, as would seem preferable, to the sectors that borrowed on over-all account.

The accounts of the Netherlands Bank are constructed on the premise that the source of inflation may, to a considerable extent, be attributed to the sectors that borrowed from the banks, rather than to the sectors that borrowed on over-all account. But the Netherlands Bank argues that to make this attribution requires that the measurement of borrowing from the creators of liquidity be carried to its logical conclusion. It requires that account be taken of the facts that there are institutions other than the banks that create liquid assets, and that increasing one's holdings of liquid assets is an offset to the act of borrowing from the creators of liquid assets. The Netherlands Bank measures, first, sector borrowings from the banks and sector holdings of money, and second, sector transactions in "secondary liquid resources," such as treasury bills. The origins of inflation are analyzed on the basis of each sector's borrowings from banks, issues of "secondary liquidities," or reductions in holdings of money and "secondary liquidities." It is of interest to note that, with this definition, money becomes a negative entry in the calculation of a sector's inflationary contribution. Since all money is held by someone, all increases in money become negative entries. Hence the liquidity deficit or surplus for the economy as a whole becomes equal to the foreign balance.

Extended money and banking statistics

The extension of money and banking type statistics to cover the whole of the financial institutions sector and also the accounts of other sectors whose data are relatively easily available has provided a second source of Monetary Analyses. While the accounts of the money and banking system cover a large part of all borrowing and lending, any extension of the analysis to include the accounts of other sectors increases the possibility of deriving useful indications of the accounts of the remaining sectors. The sectors whose accounts are relatively easily available are the other financial institutions sector (i.e., financial institutions other than the money and banking system), the government sector, and the foreign sector.

Statistics of other financial institutions

In the developed countries, the assets and liabilities of insurance companies and other financial institutions are large, and it should be possible to use them to fill additional cells in a matrix of intersector finance. The statements of Mexico and Japan cover the accounts of a wide range of financial institutions; but since the accounts of the other financial institutions are consolidated with those of the money and banking system, the accounts of the latter, which are of greatest interest in liquidity analyses, cannot be read separately. The Bank deutscher Länder's statement, "Formation of Wealth and Its Financing," is perhaps the one that puts the greatest emphasis on the accounts of banks plus other financial institutions. The statement, however, is reconciled with the national income statement and includes its figures on saving and real investment; therefore, it is also related to the statements described below in the section, Matrices of intersector finance.

Government finance statistics

Statistics of the money and banking type have also been widened by including the available accounts of the government sector. In many countries, the treasury performs some monetary functions by issuing treasury currency, by holding gold and foreign exchange reserves, or in other ways. In the statements of almost all countries whose treasuries have monetary functions, the treasury accounts covering these functions are consolidated with those of the money and banking system. However, it is not the inclusion of these aspects of government operations that is referred to here as involving a widening of the scope of statistics of the money and banking type. The accounts of the banking system report its holdings of claims on the government; the accounts

of the government report the total of government debt. By using these two sources, an estimate may be made of private sector (or private sector and foreign) holdings of government debt. The accounts of the banks and the accounts of the government are used together in this way in the statements of Finland and Canada.

Balance of payments statistics

The accounts of the money and banking system provide a measure of the accounts of the foreign sector insofar as changes in government and bank holdings of gold and foreign exchange and changes in government and bank liabilities to foreigners measure all financing transactions with the foreign sector. The balance of payments accounts organize the data on government and bank transactions with foreigners that are available from banking and government sources. Data on foreign borrowings and lendings by the private sector could be added if the data were complete and accurate. In the less developed countries, for which the accounts of the banks provide a measure of most domestic borrowing and lending, foreign borrowing and lending are sometimes large, and it might be helpful to use the balance of payments, together with the accounts of the banks and the government, to derive the accounts of the private sector. For many countries, the banking and government accounts of other countries provide information on the private sector's financial accounts. In addition, the transactions of foreign direct investment companies, which may be available in tax reports, would provide an important part of the private sector's accounts. Data on other private capital movements, however, are the weakest part of balance of payments data for the same reason that data which must be obtained from private sector sources are the weakest parts of Monetary Analyses: there are few sources of information.

Use of all three sources

The Italian statement is one that has expanded money and banking type statistics to cover all financial institutions, the government, and the balance of payments. The accounts of other financial institutions, the records of government and private capital issues, and balance of payments data on foreign borrowing and lending are used with the accounts of the banks to obtain a statement of intersector and some intrasector borrowing and lending. Private sector capital issues purchased by the private sector are an intrasector item. The issues of private businesses are entered in the account from the records of issuers; holdings already reported in the accounts of the banks and other financial institutions are subtracted; the remainder is entered as the purchases of the private

sector. For the government sector, the financing accounts obtained in this way are reconciled with the government finance statistics on revenue and expenditure. The statement, while providing a picture of intersector finance, is organized as an analysis of the sources of change in the Bank of Italy's note issue.

Matrices of intersector finance

The process of "horizontal" expansion of money and banking statistics —through the inclusion in money and banking type analyses of the accounts of all financial institutions, the financing accounts of the government, and data from the balance of payments—has led to the construction of financial statistics of very much the same type as those now being developed in a few countries through a "vertical" expansion of national income statistics. The compilation of national income statistics with income, expenditure, investment, and savings accounts for each of the sectors raises the question of accounting for the means by which sector deficits and surpluses are financed, and suggests the addition to national income accounts of intersector borrowing and lending statistics. The national income statement may be considered as the "top half" of a full statement of an economy's transactions. The financial accounts may be considered as the "bottom half." Data compiled as an extension of national income accounts may therefore be considered as the third source of Monetary Analyses.

Matrices of intersector finance constructed as vertical extensions of the national income accounts or in answer to the questions raised by the national income accounts are a recent addition to statistics. Data are available for France in the Ministry of Finance report, Accounts of the Nation; for the Netherlands, in the Central Planning Bureau's *Central Economic Plan*; and two statements for Germany, in the *Monthly Report* of the Bank deutscher Länder and in the Quarterly Bulletin of the German Institute for Economic Research. The United Kingdom, in *National Income and Expenditure*, has taken some preliminary steps toward the compilation of financial data related to the national income accounts. In the United States, the flow-of-funds accounts of the Board of Governors of the Federal Reserve System have been compiled to account consistently for all financial and nonfinancial transactions in a single accounting system designed for that purpose. The Canadians are working on a slightly different system of flow-of-funds accounts.

The construction of intersector financing accounts consistent with the national income accounts raises problems, since there are several points at which the definitions that are useful in the measurement of

income and consumption are not useful in the measurement of borrowing and lending. The "bottoms" do not easily fit the "tops" and a bridge is required. There are two principal problems.

The money and banking sector

Although the monetary system plays the largest and most interesting role in intersector financing, the national income accounts provide neither a monetary sector nor a financial institutions sector. In the national income accounts, the transactions of the monetary system are included partly in the business sector and partly in the government sector. Transactions between business and the banks and transactions between government and those parts of the monetary system included in the government sector cancel out. Financing statistics, however, must provide a monetary sector or a financial institutions sector if they are not to cancel in the mechanics of their construction a large and significant part of the lending and borrowing which they are intended to measure. It is difficult to take apart the "tops" to fit "bottoms" with an additional sector. The UN *System of National Accounts* concludes that its methods cannot lead to intersector financing data since "to produce meaningful results . . . would require a greater number of sectors including, in particular, a separate sector for banks and other financial intermediaries."

The concept of sectors

In national income definitions, certain economic units are treated as having a "split personality," i.e., of the transactions of these units some types are included in the transactions of one sector, while other types are included in the transactions of another sector. National income accounts include the business activities of government in the business sector and the income-producing activities of households in the business sector, and make similar splits in the accounts of individual proprietors and in the accounts of consumers who own houses.[2] The splits are made by imputation, i.e., by entering into the accounts the transactions that would have occurred if governments and households did not engage in business or if no consumers owned houses. Useful intersector finance statistics, however, cannot make similar imputations. While it would be possible to impute the change in a sector's net borrowing or lending that would be consistent with the national income account imputations, there would be no useful way to distribute that net figure between its gross counterparts, and no useful way to distribute the gross counterparts

[2] See United Nations, *A System of National Accounts and Supporting Tables* (Studies in Methods No. 2, New York, 1953).

between the different types of asset and liability that intersector finance statistics must report. Financing statistics must refer to decision-making units; this requires that the accounts of the central government be consolidated (and include either the gross accounts or the net financing deficits or surpluses of government agencies) and that the accounts of individuals be placed as a whole in the consumer sector.

The statements so far available that present financing accounts consistent with income and expenditure accounts have not built completely satisfactory bridges between the two sets of accounts. The U.K. accounts are derivatives from the national income accounts (income *minus* consumption *equals* saving; saving *minus* real investment expenditures *equals* financing surplus or deficit). Only for the personal sector are entries made for changes in specific assets and liabilities, and the sum of these does not reconcile with the derived financing surplus or deficit. The monetary system is included in the business sector, and no account is taken of bank financing of business. In the U.K. accounts, there are fewer difficulties in using the national income calculation for financing statistics than there would be in some other countries, since the national income and expenditure accounts of the United Kingdom do not impute the production activities of persons to the business sector, and government enterprises are included as a separate sector.

The accounts of the Netherlands and France and both of those for Germany are made by bridging the differences between the national income accounts and financing accounts obtained from asset and liability statistics of the banks and other sectors. The bridge is made by adding the accounts of the financial institutions sector and then adding adjustment items to correct for the inclusion in the business sector of the business-type activities of the government and personal sectors.

In the Netherlands and Bank deutscher Länder accounts, the money and banking system is not added directly to the list of sectors. Rather, the accounts of the other sectors specify in their financing entries changes in holdings of money and quasi money or in indebtedness to the banks. This, in effect, includes the income and expenditure transactions of banks with the business sector and reports their money-creating activities as a separate sector. The solution amounts to splitting the personalities of the banks. While split personalities for the other sectors would destroy the usefulness of intersector finance statistics, treating the banks as if they had a split personality does little harm. The extent to which their loans are financed from accumulated earnings is very small, and the important differences between banks and other businesses that call for the setting up of a money and banking sector are differences in their asset and liability accounts and not differences in their income and expenditure accounts. The French accounts and the German Insti-

tute for Economic Research accounts set up a sector for banks and financial institutions and identify their creations of money in the financing entries of the tables.

While all four of the statements provide for a book credit entry to account for the accrual items in the national income accounts, these entries in the French statement are left blank. In the Netherlands accounts, a large discrepancy item remains.

The U.S. flow-of-funds accounts achieve consistency between the "tops" and the "bottoms" by compiling for that purpose a complete set of alternatives to the national income "tops." The flow-of-funds accounts undertake to make income and financing transactions consistent by enlarging the national income system of accounting (which includes only those transactions giving rise to production and income) to include all transactions giving rise to payments in money or credit. The enlargement of the system makes it possible to maintain consistency in three ways. First, it transforms the accounts from accounts of the consumption and production sectors, i.e., from accounts representing the total of consumption and the total of production, to accounts of the consumer and business sectors, i.e., to accounts representing all transactions of the transactors classified as consumers or classified as businesses. This helps to make consistent accounts possible, because it is to the accounts of transactors that financing accounts can be reconciled. Second, it permits the inclusion of intermediate sales and purchases of goods in process of production and of transactions in second-hand goods. These transactions, when added to the national income entries, determine the amounts that any sector would have available to lend or would need to borrow. Third, it permits the inclusion of transactions that are financial transactions on both the buyer's and the seller's side. These transactions are needed for an explanation of changes in the sector's holdings of types of asset or liability. Consistently with the criterion of including all transactions giving rise to payments in money or credit, though many of them are of little quantitative importance, the scope of the accounts is in other respects reduced, compared with the national income accounts, by eliminating imputations and transactions in kind. Imputations are entries in the national income accounts representing production or the receipt of income that occurred without any transaction, e.g., the value received and consumed by an individual who owns his own house.

The principle of including all transactions giving rise to a payment in money or credit is not followed everywhere. The accounts of farmers and the accounts of the proprietors of unincorporated businesses are split between their business and household components, in order to include the latter entries in the consumer sector; and, for reasons of prac-

ticality, only net transactions in each type of financial asset are included instead of the much larger gross transactions that occur and give rise to payments.

In constructing the "bottoms," the flow-of-funds accounts have undertaken to put all entries on an "own record" basis insofar as possible. The principle of "own records" raises the problem of "float," i.e., the problem of timing inconsistencies between the accounts of any two parties to a transaction. Float results from the facts that many bank transactions and many payments are made by mail and that the time required for delivery of the mail causes the records of banks to differ from the records of depositors and the records of sellers to differ from the records of buyers. As worked out in the U.S. accounts, the records of businesses are accepted as the measure of the amounts of consumer claims on and debts to businesses, but the records of banks are not accepted as the measure of the amounts of private sector deposits and debts to banks. Business records are used to determine the amounts of business deposits, and consumer deposits are estimated as total deposits as reported by the banks, minus total mail float as estimated on the assumption that mail float is equal to "bank" float, minus business deposits as measured from business records.

A study of money-flows accounts is also being made in Canada, where a suggestion has been made for accomplishing the purposes of money-flows accounts and at the same time preserving more direct comparability between financing accounts and national income accounts. It is proposed to enlarge still further the scope of the accounts so as to include most of the transactions that need to be included to ensure consistency either with national income accounts or with financing accounts, and to return to the use of split personalities in such cases as those of consumers who own houses. This would put the national income account imputations and transactions in kind back into the accounts and hence drop the criterion of "all transactions giving rise to payments in money or credit." It is difficult to define the criterion that would remain, and it is difficult to see how the types of asset held by the sectors could be objectively and usefully distributed consistently with the imputations and split personalities retained in the "tops."

IFS MONETARY STATISTICS

Money and banking statistics are consolidated in *IFS* in statements called "Monetary Surveys." These Surveys represent a horizontal extension of money and banking data beyond the limits of the monetary system proper, i.e., the accounts of the savings banks and other institutions whose liabilities are classified as "quasi money" are included. The

assets of the money and banking system are classified by the economic sectors indebted to the system. The liabilities are classified by liquidity. The data are presented in a neutral form: all nettings (other than the netting of foreign liabilities against foreign assets) are avoided; all asset items and all liability items are shown on their respective sides of the account so that each side adds to "total assets *equals* total liabilities."

IFS money and banking data are intended also to analyze the mechanics of the money and banking system. In addition to the consolidation of the accounts of the system, they give the separate accounts of the monetary authorities (the creators of reserve money), the deposit-money banks (the creators of deposit money), and "related institutions" (institutions other than banks that play a role in the monetary system because their liabilities are close substitutes for money). In these accounts, rediscounted items ordinarily appear as loans to the original obligors in the accounts of the deposit-money banks and as loans to banks in the accounts of the central bank.

The *IFS* accounts of the money and banking system are neither a record of intersector finance nor an explanation of the origins of liquidity. They do, however, provide a measure of the volume of liquidity and the accounts of the sector whose activities are of the greatest importance in finance and liquidity creation. They also permit the derivation of a large part of the data on intersector finance and of much useful information on the origin of changes in liquidity.

The accounts of banks also have a special usefulness that more elaborate statements cannot have. They are available more currently than most other data; they extend back through a long period of years; and, within their own definitions, they are accurately compiled. They have a special usefulness in the countries in which they are most needed, for in the less developed countries reliable data of other types are relatively scarce and the activities of banks constitute a relatively large part of all financial transactions.

The shortcomings of *IFS* money and banking data are not a proof of the deficiencies of money and banking statistics but rather of the fact that more information should be sought on liquidity and financing data for the other sectors. It would be very useful to add to the accounts of the monetary system the financial asset and liability accounts of the other sectors insofar as this can be done without loss of clear and current accounts of banks, money, and bank lending.

APPENDIX

Survey of Monetary Analyses

Graeme S. Dorrance*

Assisted by Gerard R. Aubanel*

The object of this Appendix is to assemble monetary analyses published by national authorities. The form and terminology used in the national publications have been followed as closely as possible. Analyses are described for the following countries:

Argentina
Australia
Austria
Belgium
Brazil
Burma
Canada
Ceylon
Chile
Colombia
Costa Rica
Cuba
Denmark
Dominican Republic
Ecuador
Egypt
El Salvador
Finland
France
Federal Republic of Germany
Greece
Guatemala
Honduras
India
Indonesia
Israel
Italy
Japan
Republic of Korea
Mexico
Netherlands
New Zealand
Nicaragua
Norway
Peru
Philippines
Sweden
Union of South Africa
United Kingdom
United States
Viet-Nam

ARGENTINA

A table, shown here as Table 2, analyzing the causes of changes in the domestic means of payment, including government deposits, is published by Argentina. This table combines data on transactions with changes in assets; it analyzes the banking system's asset data on the basis of the purpose underlying the transactions rather than on the basis of the sectors obligated to the monetary system. Thus the credits of the monetary system to the private sector of the economy are included under three headings: (1) commercial credits; (2) mortgages (most of which are claims on the private sector); and (3) foreign operations (loans to exporters providing credit for payment of shipments are included along with foreign assets; the valuation of the latter is not stated). Claims on the Government are separated into those arising from ordinary operations of the Government, and those resulting from the nationalization and financing of public services. These two items together probably represent the major part of the financing of the

* Mr. Dorrance, of the Statistics Division, has been a lecturer at the London School of Economics, and a member of the staff of the Bank of Canada.

Mr. Aubanel, of the Statistics Division, was formerly a member of the staff of the Bank of France.

TABLE 2. ARGENTINA: CAUSES OF CHANGES IN THE DOMESTIC MEANS OF PAYMENT, 1951–55

(*In millions of Argentine pesos*)

	1951	1952	1953	1954	1955
CHANGES IN MEANS OF PAYMENT	5,597	3,875	8,770	8,882	10,600
Commercial credits	5,118	4,718	2,635	4,211	4,285
Claims on official agencies	430	791	3,061	4,515	4,570
Mortgages	1,812	2,104	2,397	3,819	4,425
Fiscal operations	392	230	2,175	736	1,238
Nationalization and financing of public services	203	129	79	131	167
Foreign operations	−432	−2,384	2,320	302	1,552
Other items	−1,926	−1,713	−3,897	−4,832	−5,637

Source: Dirección Nacional de Estadística y Censos, *Boletín Mensual de Estadística* (Buenos Aires).

Government's operations. Direct loans to government agencies, however, are classified separately. The negative entries for "other items" consist largely of increases in savings and time deposits, securities issued by the banks, and capital accounts.

AUSTRALIA

Recent Annual Reports of the Commonwealth Bank contain a table, shown here as Table 3, measuring the changes in the monetary system's accounts that may be considered the counterparts of changes in trading bank deposits, including time deposits. The table is a consolidated statement of the accounts of the Com-

TABLE 3. AUSTRALIA: MOVEMENTS IN FACTORS AFFECTING TRADING BANK DEPOSITS, 1954 AND 1955

(*In millions of Australian pounds*)

	June 30 1954	June 30 1955
International reserves	9	−142
Treasury bills outstanding	−35	−30
Other net changes in Commonwealth Bank accounts	−13	61[1]
Trading banks		
Advances	115	140
Government and municipal securities	33	−2
Other factors (net)	16	−37
MOVEMENTS IN TOTAL DEPOSITS WITH TRADING BANKS (OTHER THAN STATE BANKS)	125	−10

Source: Commonwealth Bank of Australia, *Reports and Balance Sheets* (Sydney).
[1] Includes a substantial reduction in liabilities of the central bank.

monwealth Bank and check-paying banks excluding the small state banks and savings banks. It is designed to demonstrate the factors leading to changes in the liquid assets of the trading banks and the magnitude of the banks' reactions to these changes. The items in the table are classified according to the freedom of the banking system to alter their magnitudes. The net international reserves of the community and the total of treasury bills created by the Government must, in practice, be acquired by the banks. In Australia, practically no treasury bills

are held by sectors other than the banking system, so that the Commonwealth Bank is under an obligation to purchase any bills that the Government decides to issue and that the trading banks do not acquire. The other net changes in the Commonwealth Bank accounts are the net of the other items, exclusive of accounts between the Commonwealth Bank and the trading banks. The sum of all these items is equal to the cash reserves of the trading banks, including "special" (compulsory) deposits, plus trading bank holdings of foreign assets and treasury bills. Changes in trading bank advances and government security holdings provide a measure of the two most important reactions of the banks to changes in their reserve positions. These items, together with "other factors" (which exclude accounts between the trading banks and the Commonwealth Bank), provide the immediate impetus leading to changes in deposits.

AUSTRIA

The Austrian Institute for Economic Research publishes a table, shown here as Table 4, analyzing the sources of money. The Austrian National Bank has provided an alternative table for this survey, which is shown here as Table 5. Both these tables are analyses of the changes in the accounts of the monetary system intended to explain changes in money.

TABLE 4. AUSTRIA: CHANGES IN THE MONEY SUPPLY AND ITS DISTRIBUTION, 1951–55

(In billions of schillings)

	1951	1952	1953	1954	1955
MONEY	17.30	18.61	23.15	28.83	29.19
Currency	7.82	8.79	10.25	11.98	12.79
Deposit money	9.48	9.82	12.90	16.85	16.39
Held by					
Private sector	*5.94*	*6.38*	*7.93*	*9.66*	*9.37*
Official holders	*3.54*	*3.44*	*4.98*	*6.78*	*6.48*
Foreign banks	....	....	....	*0.41*	*0.54*
INCREASES IN MONEY	2.82	1.31	4.54	5.68	0.37
Expansive and contractive (−) factors					
Foreign assets	0.13	1.63	4.80	2.61	−1.45
Commercial credit	2.58	0.66	1.94	4.00	4.13
Other factors	0.21	0.08	−0.39	2.00	0.74
(Securities)	(—)	(0.03)	(0.40)	(1.40)	(1.65)
(Treasury bills)	(0.34)	(0.34)	(−0.10)	(0.17)	(−0.09)
Savings deposits	−0.08	−1.04	−1.70	−2.53	−2.46
Borrowing	−0.02	−0.02	−0.10	−0.40	−0.58

Source: Österreichische Institut für Wirtschaftsforschung, *Statistische Übersichten zu den Monatsberichten* (Vienna).

The Institute for Economic Research table is a consolidated statement of the accounts of the monetary system and related institutions that includes a large unclassified entry for "other factors." The National Bank table is a statement of the separate accounts of the National Bank and the credit institutions (the latter including related financial institutions other than banks). The cash reserves of credit institutions are excluded from the assets included in the table. Similarly, credit extended by the National Bank to the credit institutions is recorded as an increase in National Bank assets with an offsetting liability in the accounts of

TABLE 5. AUSTRIA: MONEY SUPPLY AND FACTORS LEADING TO CHANGES, 1951–55

(In billions of schillings)

	1951	1952	1953	1954	1955
MONEY SUPPLY	17.30	18.61	23.15	28.83	29.20
Bank notes and treasury coin	7.82	8.79	10.25	11.98	12.79
Checking deposits	9.48	9.82	12.90	16.85	16.41
With					
National Bank	*0.58*	*0.35*	*0.81*	*0.97*	*1.13*
Credit institutions	*8.90*	*9.47*	*12.09*	*15.88*	*15.28*
Held by					
Private sector	*6.19*	*6.15*	7.77	*9.30*	*9.24*
Official holders	*3.29*	*3.67*	*5.13*	7.14	*6.63*
Foreign banks	....	....	....	*0.41*	*0.54*
CHANGES IN MONEY SUPPLY	2.82	1.31	4.54	5.68	0.37
Expansive and contractive (−) factors					
In accounts of National Bank	3.11	1.39	2.98	2.03	0.35
Gold and foreign exchange	*0.13*	*1.63*	*4.80*	*2.61*	*−1.38*
Commercial bills discounted	*0.84*	*−0.39*	*−0.80*	*−0.16*	*0.82*
Reconstruction credit discounts	*1.88*	*0.63*	*0.14*	*0.08*	*−0.09*
Treasury certificates	*0.26*	*−0.48*	*−1.14*	*−0.49*	*0.31*
Advances against collateral	—	—	*−0.02*	*−0.01*	*0.69*
In accounts of credit institutions	1.71	0.70	2.18	2.96	0.44
Foreign exchange	....	....	....	*−0.12*	*−0.02*
Commercial bills	*0.42*	*0.71*	*0.83*	*0.70*	*0.50*
Loans	*0.15*	*0.14*	*0.19*	*0.83*	*1.31*
Sundry debtors	*1.14*	*0.01*	*1.62*	*2.64*	*1.17*
Treasury certificates	*0.07*	*0.36*	*1.02*	*0.45*	*−0.50*
Security holdings	*0.03*	*0.03*	*0.30*	*1.42*	*1.72*
Liability on securities pledged at National Bank	—	—	*0.02*	*−0.01*	*−0.69*
Savings deposits	*−0.03*	*−1.03*	*−1.70*	*−2.53*	*−2.46*
Debentures issued	*−0.02*	*−0.02*	*−0.10*	*−0.40*	*−0.59*
Other factors	−2.00	−0.78	−0.62	0.67	−0.42

Source: Austrian National Bank.

the credit institutions. Hence, in most years, the increase in the assets of the National Bank is larger than the increase in its liabilities included in money, and the net increase in the assets of the credit institutions is smaller than the increase in their monetary liabilities. In both tables, the 1955 entry for changes in foreign assets is not the change in the system's foreign assets, but the change that would have occurred except for the transfer of 1.05 billion schillings of gold from the Government to the National Bank, i.e., it is a measure of the monetary effect of transactions by Austrian residents with foreigners. The offset to this transfer is included as an adjustment to the claims on the Government (included in the "other factors" in the Institute's table). For the years up to 1953 the changes in foreign assets reflect arbitrary valuations. Savings and time deposits and the issue of long-term bonds are considered as contractive factors that reduce the expansion of money arising from the monetary system's purchase of assets.

BELGIUM

Two tables that provide an analysis of the factors leading to changes in money are published in Belgium. The first table, shown here as Table 6, is essentially a consolidated balance sheet of the monetary system (the National Bank of Belgium, the Currency Issue Department of the Treasury, the postal checking office, the deposit-money banks, the Crédit Communal, which holds the greater part of the

TABLE 6. BELGIUM: CONSOLIDATED STATEMENT OF MONETARY INSTITUTIONS, 1951–55

(In billions of Belgian francs)

	1951	1952	1953	1954	1955
MONETARY STOCK	168.5	174.5	180.3	183.6	192.7
Currency	99.1	102.0	105.9	106.7	110.7
Deposit money	69.4	72.5	74.4	76.9	82.0
Held by					
Business and individuals	*62.0*	*65.1*	*67.3*	*69.5*	*74.1*
Official agencies	7.4	7.4	7.1	7.4	7.9
COUNTERPARTS TO MONETARY STOCK					
1. Net foreign assets	38.5	50.4	50.3	48.3	54.7
Net sight assets	36.8	46.7	47.6	46.8	51.3
National Bank	*50.2*	*51.0*	*52.4*	*50.5*	*56.1*
Private banks	*−13.4*	*−4.3*	*−4.8*	*−3.7*	*−4.8*
Other assets (net)	1.7	3.7	2.7	1.5	3.4
2. Claims on Treasury and obligations of other governmental borrowers	115.7	116.5	121.5	122.5	125.2
Government debt	113.1	115.2	120.4	119.9	122.4
Debt of other governmental borrowers	1.0	1.0	1.1	1.4	2.1
Advances to fund to stabilize government bond prices	1.6	0.3	—	1.2	0.7
3. Discounts for, advances to, and acceptances by, business and individuals in Belgium	36.2	36.5	38.7	41.7	44.4
4. Miscellaneous	0.1	−1.3	−1.7	1.8	3.2
Balance of operations of Crédit Communal, National Institute for Credit to Small Enterprises, and Treasury Currency Issue Department, at other than short term	1.4	0.4	0.1	2.0	3.7
Credit transactions with nonmonetary financial institutions	0.7	−0.1	0.1	1.0	1.3
Balance of assets and liabilities not listed above	−2.0	−1.6	−1.9	−1.2	−1.8
5. Balancing item	2.1	0.2	1.0	1.6	0.9
Total (1 through 5)	192.6	202.3	209.8	215.9	228.4
6. Deduction items	24.1	27.8	29.5	32.3	35.7
Quasi-monetary liabilities of money-creating institutions	18.1	21.6	22.3	23.4	25.9
Held by business and individuals	*14.6*	*18.6*	*20.6*	*21.3*	*23.4*
Foreign exchange deposits of business and individuals	*2.4*	*1.6*	*1.5*	*2.0*	*2.4*
Held by Treasury	*1.1*	*1.4*	*0.2*	*0.1*	*0.1*
Net worth minus fixed assets of monetary institutions	5.4	5.2	5.3	6.0	6.0
Debentures of deposit-money banks	0.6	1.0	1.9	2.9	3.8

Source: Banque Nationale de Belgique, *Bulletin d'Information et de Documentation* (Brussels).

deposits of government agencies and municipalities, and the National Institute for Credit to Small Enterprises and its affiliated organizations). The monetary liabilities to the private sector, and to local governments and government agencies, are placed at the top of the table and separated from the other liabilities that follow the analysis of the system's assets (the Government operates with essentially no deposit holdings). The assets are analyzed by the economic sectors obligated to the monetary system (the foreign sector, the Government, including government agencies, and the private sector). The quasi money held by the private sector is largely in the form of time deposits and foreign currency deposits; that recorded as held by the Treasury is predominantly U.S. aid counterpart funds. It should be noted that only the quasi money issued by money-creating institutions is included. The liabilities of savings banks and similar institutions are not included.

The second table, shown here as Table 7, combines data on changes in the accounts analyzed in the first table with some transactions data. It separates the changes in the foreign assets of the monetary system into (1) the capital transactions with, and donation receipts of, the Government from foreigners, and (2) the net change in foreign assets arising from other factors (balance of foreign transactions). The changes in the monetary system's claims on Government are separated into (1) those arising from direct credit operations with the Government and (2) the purchase of outstanding government securities. The direct financing of the Government, and the purchase and sale of foreign exchange arising from government financing transactions, are combined to provide a measure of the monetary system's financing of the Government (monetary financing of official agencies).

TABLE 7. BELGIUM: CAUSES OF CHANGES IN THE MONETARY STOCK, 1951–55

(In billions of Belgian francs)

	1951	1952	1953	1954	1955
Changes in monetary stock	12.4	6.0	5.8	3.3	9.1
Changes in quasi-monetary items	2.5	3.5	0.7	1.1	2.4
Time deposits and special accounts of exporters to EPU countries	*0.9*	*4.0*	*2.0*	*0.7*	*2.1*
Foreign exchange deposits of nationals	*0.5*	*−0.8*	*−0.1*	*0.5*	*0.3*
Treasury holdings	*1.1*	*0.3*	*−1.2*	*−0.1*	—
Total of changes in monetary stock and quasi-monetary items	**14.9**	**9.5**	**6.5**	**4.4**	**11.5**
Balance of foreign transactions	10.5	6.4	−1.0	−4.7	4.1
Monetary financing of official agencies	4.5	5.3	5.8	0.4	3.2
Monetization of government debt	−1.6	0.3	1.1	3.2	2.0
Changes in discounts for, advances to, and acceptances by, business and individuals resident in Belgium	3.0	0.3	2.2	3.0	2.7
Changes in net worth minus fixed assets of monetary institutions	−0.7	0.2	−0.1	−0.7	—
Debentures issued by deposit-money banks	−0.3	−0.4	−0.9	−1.0	−0.9
Balance of operations, other than at short term, by Treasury Currency Issue Department, Crédit Communal, and National Institute for Credit to Small Enterprises	0.2	−1.0	−0.3	1.9	1.7
Miscellaneous					
Credit transactions with nonmonetary financial institutions	−0.2	−0.8	0.2	0.9	0.2
Changes in assets and liabilities not listed above	0.2	0.4	−0.3	0.7	−0.6
Balancing item	−0.7	−1.2	−0.1	0.7	−0.9
Total	**14.9**	**9.5**	**6.5**	**4.4**	**11.5**

Source: Banque Nationale de Belgique, *Bulletin d'Information et de Documentation* (Brussels).

BRAZIL

In Brazil, the Superintendency of Money and Credit prepares a table, shown here as Table 8, which analyzes the composition of money and the causes of its variations. The table is primarily an external-internal origin analysis of the total of money; in addition, it allocates responsibility for money creation to the monetary authorities and to the commercial banks.

The money originating as a result of the action of the monetary authorities (in Brazil there are several agencies associated with the Bank of Brazil as monetary authorities) is defined as the total currency outside the monetary system, plus the deposits of the commercial banks with the authorities, minus their borrowings from the authorities. Money originating as the result of the action of the commer-

TABLE 8. BRAZIL: MEANS OF PAYMENT, 1954 AND 1955

(*In billions of cruzeiros*)

	1954	1955
According to composition	**151.5**	**177.4**
Paper currency in the hands of the public	48.9	57.0
Paper credit	102.6	120.4
Bank of Brazil	17.6	18.5
Other banks	84.9	101.9
According to responsibility	**151.5**	**177.4**
Monetary authorities	75.3	88.1
Commercial banks	76.2	89.3
According to origin	**151.5**	**177.4**
Foreign origin	−6.1	−3.9
Monetary authorities	−5.2	−3.5
Gold	*6.5*	*6.5*
Foreign exchange (net position)	*−4.0*	*−3.7*
Compulsory deposits with Exchange Department	*−1.8*	*−1.8*
Deposits for import licenses	—	—
Foreign currency obligations for loans contracted	*−5.5*	*−4.5*
International Monetary Fund—net obligation	*−0.6*	*−0.5*
Commercial banks (international reserves)	−0.9	−0.4
Domestic origin	157.6	181.3
Loans to National Treasury	33.5	41.9
Monetary authorities (balance of operations with National Treasury or under its responsibility)	*33.5*	*41.9*
Commercial banks	—	—
Loans to other government bodies	20.4	23.0
Monetary authorities	*15.9*	*18.2*
Commercial banks	*4.5*	*4.8*
Other applications	103.7	116.4
Monetary authorities	*31.1*	*31.5*
Commercial banks	*72.6*	*84.9*

Source: Superintendência da Moeda e do Crédito, *Boletim* (Rio de Janeiro).

cial banks is defined as the total of the deposit liabilities of these banks, plus their borrowings from the authorities, and minus their own cash holdings. Thus the responsibility for changes in money are allocated to the authorities and to the commercial banks primarily on the basis of whether the changes occur in the liabilities of the authorities or the banks. The consolidation adjustments for bank cash and intrasystem borrowing allocate changes in cash as a responsibility of the monetary authorities, and lending by the authorities as a responsibility of the banks.

The consolidated accounts of the monetary system are classified as foreign and domestic. The items of foreign origin are the monetary system's foreign assets minus its foreign liabilities, including liabilities to residents that will be discharged in foreign exchange (e.g., advance deposits by importers for exchange purchases). The difference between the total money outstanding and the factors of foreign origin are considered to be the factors of domestic origin. The loans to the National Treasury and other government bodies are segregated from other factors of domestic origin to provide a measure of the system's financing of the Government and government agencies (for the period covered by the

analysis there were no government holdings of money, as the Government operated with an overdraft). The remaining difference is classified as "other applications" and is presumably to be taken as an indication of the changes in money arising from the financing of the private sector.

BURMA

Two closely related tables, analyzing changes in money, are published by Burma. In the first of these tables, shown as Table 9 below, changes in money, excluding government deposits, are treated as originating in the net balance of transactions between the monetary system and (1) the foreign sector, (2) the Government, and (3) the private sector. For the private sector, the entries exclude changes in demand deposits, which are a part, rather than a cause, of changes in the money supply; changes in time deposits (increases being counted as negative) are entered separately from the net balance on other accounts ("bank credit").

In the other table, shown as Table 10 below, changes in money, including government deposits, are analyzed. This table gives slightly more detail on the changes in the foreign exchange balances, distinguishing between changes in the balances of the monetary authorities and those of the commercial banks. It also separates changes in commercial bank loans and advances from other commercial bank transactions with the private sector, but includes increases in quasi money among the miscellaneous transactions covered by "other factors."

TABLE 9. BURMA: FACTORS AFFECTING PRIVATE MONEY SUPPLY, 1953–55

(*In millions of kyats*)

	1953	1954	1955
CHANGES IN PRIVATE MONEY SUPPLY	144.9	80.3	254.9
Transactions with foreign sector	−212.9	−548.5	....
Transactions with Government	371.9	619.1	568.9
Bank credit	−8.8	20.9	20.6
Shift between demand and time deposits	−5.5	−11.2	....

Source: Union Bank of Burma, *Bulletin* (Rangoon).

TABLE 10. BURMA: FACTORS CHANGING TOTAL MONEY SUPPLY, 1953–54 AND 1954–55

(*In millions of kyats*)

	Sept. 1953–Sept. 1954	Sept. 1954–Sept. 1955
Changes in foreign exchange balances	−380.7	−253.5
Held by		
Monetary authorities	*−400.3*	*−263.8*
Commercial banks (net)	*19.6*	*10.3*
Changes in government and government-guaranteed securities held by banking system	188.1	433.6
Changes in commercial bank loans and advances (excluding interbank loans)	17.3	23.7
Other factors	−44.6	−5.7
CHANGES IN TOTAL MONEY SUPPLY	−219.9	−198.1

Source: Central Statistical and Economics Department, *Quarterly Report on Economic Progress in Burma* (Rangoon).

CANADA

The Bank of Canada publishes two tables analyzing changes in the financial assets of the private sector of the economy. The first of these, summarized here as Table 11, provides a measurement of certain liquid assets as defined by the Bank, and of the related factors that are the counterpart of the assets. The second table, shown here as Table 12, provides a direct measurement of personal savings in Canada.

TABLE 11. CANADA: GENERAL PUBLIC HOLDINGS OF CERTAIN LIQUID ASSETS, AND RELATED FACTORS, 1951–55

(In millions of Canadian dollars)

	1951	1952	1953	1954	1955
Certain Liquid Assets					
Currency outside banks	1,275	1,377	1,429	1,458	1,550
Notes	*1,191*	*1,289*	*1,335*	*1,362*	*1,449*
Coin	*84*	*88*	*94*	*96*	*101*
Chartered bank deposits	3,502	3,751	3,675	3,967	4,207
Public demand	*2,993*	*3,373*	*3,368*	*3,597*	*3,815*
Active notice	*717*	*796*	*823*	*903*	*974*
Other[1]	*280*	*289*	*236*	*294*	*320*
Adjustment for float	*−489*	*−706*	*−752*	*−827*	*−1,002*
Bank of Canada "other" deposits	66	45	30	31	34
Total currency and active deposits	4,843	5,173	5,134	5,456	5,791
Resident-owned	*4,608*	*4,977*	*4,937*	*5,228*	*5,568*
Nonresident-owned	*235*	*196*	*197*	*228*	*223*
Inactive chartered bank notice deposits[1]	3,894	4,129	4,211	4,712	5,122
Resident-owned	*3,753*	*4,017*	*4,100*	*4,603*	*5,011*
Nonresident-owned	*141*	*112*	*111*	*109*	*111*
TOTAL CURRENCY AND BANK DEPOSITS	8,737	9,302	9,345	10,168	10,913
Government of Canada securities	9,388	9,062	9,283	8,713	9,083
Resident-owned	*8,220*	*8,107*	*8,448*	*7,999*	*8,532*
Nonresident-owned	*1,168*	*955*	*835*	*714*	*551*
Total of certain liquid assets	**18,125**	**18,364**	**18,628**	**18,881**	**19,996**
Resident-owned	*16,581*	*17,101*	*17,485*	*17,830*	*19,046*
Nonresident-owned	*1,544*	*1,263*	*1,143*	*1,051*	*950*
Related Factors					
Government of Canada debt less government deposits and holdings of government accounts	14,151	14,008	13,788	14,015	13,904
Public holdings	9,388	9,062	9,283	8,713	9,083
Bank holdings	4,763	4,946	4,505	5,302	4,821
Bank of Canada	*2,096*	*2,211*	*2,219*	*2,166*	*2,278*
Chartered banks	*2,666*	*2,735*	*2,286*	*3,136*	*2,543*
Bank assets other than Government of Canada securities	3,974	4,356	4,840	4,866	6,092
Total of related factors	**18,125**	**18,364**	**18,628**	**18,881**	**19,996**

Source: Bank of Canada, *Statistical Summary* (Ottawa).
[1] Excluding government deposits.

The Canadian authorities do not publish a total that they call money. The Bank of Canada includes currency and certain bank deposits in the total of "currency and active deposits."[1] This total is comparable to the total of money in the statistics of most other countries. The total of currency and active deposits plus

[1] See Notes to Canada page in *International Financial Statistics* for a discussion of chartered bank notice deposits and a description of their division into "active" and "inactive."

TABLE 12. CANADA: DIRECT ESTIMATE OF PERSONAL SAVINGS IN CANADA, 1951–54

(In millions of Canadian dollars)

	1951	1952	1953	1954[1]
I. Asset changes (annual increase [+] or decrease [−])				
A. Liquid assets				
Currency and active bank deposits	+98	+242	+44	+166
Inactive bank deposits	+104	+251	+130	+384
Other institutional deposits	+63	+104	+87	+175
Government of Canada nonmarket securities	+65	+81	+382	+458
Government of Canada market securities	−288	+88	+57	−750
Refundable tax	—	—	—	—
Other bonds and stocks	+150	+315	+325	+250
Total	+192	+1,081	+1,025	+683
B. Contractual saving				
Life insurance	+228	+245	+272	+300
Government of Canada annuities	+56	+59	+62	+65
Total	+284	+304	+334	+365
C. Real investment				
Inventories				
Farm	+354	+237	+50	−145
Unincorporated business	+142	−11	+69	+33
Other real investment				
Residential construction	+723	+718	+939	+1,010
Farm: construction, machinery, and equipment	+532	+549	+540	+389
Unincorporated business: construction, machinery, and equipment	+367	+345	+480	+473
Depreciation (−)	−768	−830	−916	−977
Total	+1,350	+1,008	+1,162	+783
D. Total change in assets	+1,826	+2,393	+2,521	+1,831
II. Liability changes (annual increase [+] or decrease [−])				
A. Consumer debt				
To corporate retail dealers (charge accounts and installment credit)	−31	+111	+53	+32
To sales finance companies; installment credit	−16	+187	+139	−29
Cash personal loans	+2	+72	+109	+98
B. Mortgage debt (to government and corporate lenders)	+264	+180	+249	+347
C. Loans from chartered banks to				
Individuals (on the security of marketable bonds and stocks)	−9	+40	+30	−34
Farmers	+35	+30	+25	+5
Unincorporated business	+32	+16	+85	+12
Religious, educational, health, and welfare institutions	+10	−3	+8	+7
D. Loans from stockbrokers	+12	+4	−15	+8
E. Other net payables of unincorporated business				
To sales finance companies				
Commercial goods; installment credit	+28	+32	+14	−16
Wholesale financing	+8	−7	+12	−20
To other corporations	+51	−1	+75	+54
F. Total change in liabilities	+386	+661	+784	+464
III. Direct estimate of personal savings (I. D minus II. F)	+1,440	+1,732	+1,737	+1,367
IV. National income estimate of personal savings	+1,390	+1,525	+1,600	+1,071

Source: Bank of Canada, *Statistical Summary* (Ottawa).
[1] Preliminary.

the inactive chartered bank notice deposits is shown as a separate series entitled "currency and bank deposits." Finally, this total plus the private sector's holdings of Government of Canada securities is reported as the total of "certain liquid assets." Since the statement analyzes changes in liquid assets, as defined by the Bank of Canada, rather than changes in money, or money and quasi money, it includes the private sector's holdings of government debt in the consolidation and the entire net government debt (i.e., the total government debt, other than

amounts held by the Government, less government deposits) in the counterpart side of the analysis. Because the Exchange Fund is part of the Government, the statement combines, in the figure for government debt, changes in liquid assets available to the public, arising from both the balance of government accounts and the balance of foreign payments.

In the table analyzing personal savings (Table 12), estimates are made of changes in the assets held by the personal sector; this sector is defined to include consumers, unincorporated business, private pension funds, and religious, education, health, and welfare institutions. The assets are analyzed as liquid, contractual, and other. The liquid assets include the "certain liquid assets" referred to above plus other items that are considered by the Bank to be liquid. Changes in liabilities are deducted from changes in assets to provide not only a direct estimate of personal savings but also a statement of the changes in the asset-liability structure of the personal sector. No data are provided, however, for total assets and total liabilities held by the sector.

CEYLON

The Central Bank of Ceylon publishes a table, shown here as Table 13, analyzing the counterparts to the money supply, excluding government holdings. The external assets are the sum of the net foreign exchange and gold holdings of the Central Bank and the commercial banks. The domestic assets are separated into (1) net assets of the Central Bank and (2) assets of the commercial banks. The Central Bank's net assets are claims on the Government, less the capital and security indebtedness of the Bank, and less deposits of others than the Government and banks. The assets of the commercial banks are classified as government securities or claims on the private sector, the cash reserves of these banks being excluded in the process of consolidation. The quasi-monetary liabilities of the system and the Government's monetary holdings are treated as separate and identifiable deductions from the system's assets.

TABLE 13. CEYLON: ANALYSIS OF CHANGES IN MONEY SUPPLY, 1951–55

(In millions of Ceylon rupees)

	1951	1952	1953	1954	1955
MONEY SUPPLY	1,006	896	827	957	1,073
External assets (net)	802	439	306	647	864
Central Bank's domestic assets (net)	6	144	202	−19	−45
Commercial banks' domestic assets					
Government securities	235	302	284	310	284
Private loans, bills, etc.	224	203	221	259	274
Savings deposits and other liabilities (net)	−119	−129	−134	−170	−186
Government rupee cash	−129	−59	−52	−69	−116
In transit adjustments	−12	−4	—	—	−2

Source: Central Bank of Ceylon, *Bulletin* (Colombo).

CHILE

The Central Bank of Chile analyzes money in circulation, including the holdings of official entities and the Government, in a table shown here as Table 14. This table is a condensed combined balance sheet of the monetary system. The accounts of the commercial banks are analyzed by type to provide a net sum equal to their current deposits. The monetary liabilities of the Central Bank, other

than commercial bank cash, are considered equal to the net assets of the Bank. Consequently, it is impossible to derive data on the accounts of the monetary system with the significant economic sectors.

TABLE 14. CHILE: MONEY IN CIRCULATION, 1951–55

(In billions of Chilean pesos)

	1951	1952	1953	1954	1955
Current accounts with commercial banks and State Bank					
Asset operations	25.00	30.93	49.25	64.12	92.85
Loans	*22.79*	*28.07*	*43.24*	*58.12*	*87.27*
Investments	*5.11*	*5.92*	*6.72*	*8.26*	*14.89*
Cash	*2.67*	*3.51*	*6.04*	*9.17*	*11.33*
Funds borrowed from Central Bank	*−5.57*	*−4.57*	*−6.74*	*−11.43*	*−20.64*
Liability operations	8.70	10.52	17.37	17.71	18.39
Deposits other than in current accounts	*6.29*	*7.43*	*9.85*	*12.50*	*16.72*
Capital and reserves	*3.20*	*3.76*	*6.47*	*7.17*	*11.56*
Other accounts (net)	*−0.79*	*−0.67*	*1.07*	*−1.76*	*−9.89*
Total	16.30	20.42	31.87	46.41	74.48
Current accounts with Central Bank	0.33	0.51	0.98	0.96	1.69
Notes and currency in circulation	7.97	11.50	16.66	22.75	40.03
TOTAL MONEY IN CIRCULATION	24.60	32.43	49.51	70.12	116.20

Source: Banco Central de Chile, *Boletín Mensual* (Santiago).

COLOMBIA

Three monetary analyses are available in Colombia, two of which are published by the central bank. The Review of the Bank of the Republic contains a brief statement of the origin of money; and the Annual Report of the Bank contains a slightly more detailed statement. The Superintendent of Banks publishes a brief analysis.

The data published in the Review measure the origins of money, including government deposits, as shown in Table 15. The difference between the total money in circulation and the international reserves of the Bank of the Republic, as estimated from the internal records of the Bank, is considered to be the fiduciary circulation. This is subdivided into money originating with the monetary authorities and with the other banks. Treasury coin is defined as originating with the Treasury. The money originating with the Bank of the Republic is the total monetary liabilities of the Bank, including cash holdings of the other banks, minus the international reserves of the Bank. The money originating with the other banks is defined as the deposits with them minus their cash reserves. The other banks covered by this table include development institutions and savings banks, which might be considered as institutions related to, but not included among, deposit-money banks.

The Annual Report table analyzes the origins of money, both including and excluding government deposits, as shown here in Table 16. In this table, the net foreign assets of all banking institutions, rather than the holdings of the Bank of the Republic only, are included in the entry for international reserves. The domestic assets of the Bank of the Republic are separated into "credit" (chiefly loans to the banks) and "other assets" (chiefly holdings of government securities). The nonmonetary liabilities of the Bank are deducted from the domestic assets to

TABLE 15. COLOMBIA: ORIGINS OF MONEY IN CIRCULATION, 1951–55

(In millions of Colombian pesos)

	Dec. 1951	Dec. 1952	Dec. 1953	Dec. 1954	Dec. 1955
International reserves of Bank of the Republic	270	327	396	527	250
Fiduciary circulation	941	1,093	1,219	1,477	1,834
Treasury and Bank of the Republic	482	594	580	721	963
Treasury	*23*	*29*	*31*	*34*	*36*
Bank of the Republic	*454*	*565*	*548*	*687*	*927*
Other banks	459	499	640	756	872
Total money	**1,211**	**1,421**	**1,615**	**2,004**	**2,084**
International reserves as percentage of total money	22.3	23.0	24.5	26.3	12.0

Source: Banco de la República, *Revista* (Bogota).

provide a measure of the money originating in the central bank. In this calculation, the cash reserves of the other banks and government deposits are included in the nonmonetary liabilities of the Bank of the Republic. Hence the money considered as originating in the Bank of the Republic plus the Bank's component of the international reserves is equal to the Bank's monetary liabilities held by the private sector. The assets of the other banking institutions are classified as loans, investments, and "other assets" (largely cash reserves). These domestic assets minus the nonmonetary liabilities of these institutions (consisting of loans from the Bank of the Republic, capital contributions from the Government, bonds issued, and quasi-monetary liabilities) plus the banks' component of the international reserves are equal to their monetary liabilities held by the private sector. The international reserves plus the money "originating" in the Bank of the Republic and the other banks are equal to the privately held money. This total plus government deposits is the same as the total money supply measured in the Review table.

TABLE 16. COLOMBIA: ORIGINS OF MONEY, 1951–55

(In billions of Colombian pesos)

	June 1951	June 1952	June 1953	June 1954	June 1955
International reserves of monetary institutions	0.15	0.21	0.31	0.45	0.18
Bank of the Republic	0.16	0.14	0.11	0.11	0.26
Credit	*0.87*	*0.88*	*0.80*	*0.86*	*0.76*
Other assets	*0.06*	*0.09*	*0.09*	*0.11*	*0.09*
Nonmonetary liabilities	*−0.17*	*−0.23*	*−0.28*	*−0.36*	*−0.58*
Banking institutions	0.62	0.80	0.89	1.11	1.31
Loans	*0.87*	*1.22*	*1.47*	*1.81*	*2.18*
Investments	*0.07*	*0.22*	*0.26*	*0.32*	*0.45*
Other assets	*0.11*	*0.20*	*0.24*	*0.37*	*0.38*
Nonmonetary liabilities	*−0.43*	*−0.85*	*−1.08*	*−1.40*	*−1.80*
Treasury money	0.03	0.03	0.03	0.03	0.03
TOTAL MONEY, EXCLUDING GOVERNMENT DEPOSITS	0.95	1.17	1.33	1.70	1.78
Government deposits	0.06	0.12	0.14	0.17	0.25
TOTAL MONEY, INCLUDING GOVERNMENT DEPOSITS	1.01	1.29	1.47	1.87	2.03

Source: Banco de la República, *Informe Anual* (Bogota).

The analysis of the factors of expansion and contraction of money prepared by the Superintendent of Banks was first published in 1956. As shown by Table 17 —presenting data for January of each of the years, 1953, 1954, and 1955—the table is a consolidated statement of the accounts of the banking system, including "related institutions"; it analyzes the factors leading to an expansion or contraction of money, excluding government deposits. The international reserves are the net foreign assets of the monetary system. Loans ("credit") are separated from investments. Quasi money ("other domestic liabilities") is shown together with capital accounts as a contractive factor. The entry for "net other assets" is a balancing item.

These three tables are similar in that they adopt comparable definitions of money and comparable classifications of assets, and the asset classification is by type of asset. In all of them it is impossible to derive measures of the accounts of the banking system with economic sectors other than the foreign sector.

TABLE 17. COLOMBIA: EXPANSION AND CONTRACTION OF MONEY, 1953–55

(In millions of Colombian pesos)

	Jan. 1953	Jan. 1954	Jan. 1955
Expansive factors			
International reserves	327	356	323
Internal credit	1,541	1,627	2,256
Investments	459	599	711
Other assets, net	406	394	507
Contractive factors			
Other domestic liabilities	−576	−590	−730
Capital and reserves	−390	−452	−629
Subtotal	1,767	1,934	2,438
Treasury money	30	31	34
TOTAL MONEY	1,797	1,965	2,472

Source: Superintendencia Bancaria, *Boletín* (Bogota).

COSTA RICA

The Central Bank of Costa Rica publishes a table, shown here as Table 18, that analyzes the origin of money, including government deposits and deposits of official entities. In addition to providing an internal-external origin analysis of money, this table allocates responsibility for its creation to the Central Bank and to the commercial banks. The total monetary liabilities of the Central Bank, including deposits of the commercial banks, are the component of the total money considered to be created by the Central Bank. The liabilities of the commercial banks included in money, minus their deposits with the Central Bank and their currency holdings, are the component considered to be created by the commercial banks. For both the Central Bank and the commercial banks, the net foreign assets (which include in assets the net IMF position and in liabilities the foreign currency liabilities to residents) are considered to be measures of money of external origin. For both the Central Bank and the commercial banks, the difference between the totals considered to be of their creation and the portion of these totals considered to be of external origin is the measure of money of internal origin.

TABLE 18. COSTA RICA: ORIGINS OF MONEY, 1951–55

(In millions of Costa Rican colones)

	1951	1952	1953	1954	1955
MONEY IN CIRCULATION	233.6	270.4	297.2	329.9	341.5
Created by Central Bank	151.6	173.4	186.9	209.8	213.2
External origin	*53.1*	*88.8*	*106.2*	*95.0*	*116.8*
Internal origin	*98.5*	*84.6*	*80.7*	*114.8*	*96.4*
Created by commercial banks	82.0	97.0	110.3	120.1	128.2
External origin	*2.7*	*6.2*	*4.4*	*6.7*	*6.5*
Internal origin	*79.3*	*90.8*	*105.9*	*113.4*	*121.7*

Source: Banco Central de Costa Rica, *Boletín Estadístico Mensual* (San Jose).

CUBA

The National Bank of Cuba publishes a table, shown below as Table 19, that provides an external-internal origin analysis of privately held money, including foreign currency deposits of residents. Money of external origin comprises the net foreign assets of the National Bank (including the net IMF position), plus treasury holdings of foreign currency, plus the net foreign assets of the deposit-money banks, plus the cost of silver coin in circulation, minus the face value of silver coin in circulation. Money of internal origin comprises the total consolidated domestic assets of the National Bank and the deposit-money banks (i.e., excluding interbank deposits), plus the value of treasury coin in circulation, minus the nonmonetary domestic liabilities of the banks, minus the cost of the coin in circulation, minus the deposits of the Government.

TABLE 19. CUBA: ORIGINS OF PRIVATELY HELD MEANS OF PAYMENT, 1951–55

(In millions of Cuban pesos)

	1951	1952	1953	1954	1955
Internal origin	316.9	437.3	391.3	440.3	477.8
External origin	584.9	510.9	522.2	483.9	512.6
TOTAL MEANS OF PAYMENT	901.8	948.2	913.5	924.2	990.4

Source: Banco Nacional de Cuba, *Revista* (Havana).

DENMARK

Two related monetary analyses are published in Denmark. Both are explanations of the factors leading to changes in the community's holdings of "reserve money,"[1] plus treasury bills. Both the National Bank of Denmark and the Economic Secretariat of the Government refer in their analyses to the "money supply." As defined by the National Bank, this term comprises outstanding notes, sight deposits with the National Bank, and treasury bills held by the economy. The money supply as defined by the Economic Secretariat includes all the components of the National Bank's definition plus deposits in postal transfer ac-

[1] For a definition of the term, "reserve money," see page 345.

counts. The money supply—according to both definitions—is considered to measure commercial bank liquidity.[2] However, both definitions include items other than liquid holdings of the banks (i.e., treasury bills and national bank notes held by others than banks), while they exclude some liquid holdings of banks (i.e., foreign assets and coin). As the analyses are concerned with reserve money, both exclude from the money supply deposits with deposit-money banks, on the ground that they bear a more or less constant relationship to the money supply as defined. On the other hand, treasury bills are included primarily to emphasize the inflationary effect of short-term financing of government deficits.

TABLE 20. DENMARK: TRENDS IN LIQUIDITY, 1951–55

(In millions of Danish kroner)

	1951	1952	1953	1954	1955
Influences[1]					
1. Government accounts					
Drawings against Ministry of Finance, current account	265	−315	−158	329	528
Reduction of Government Regulation Account	−93	−128	−103	−45	−38
Payments into Ministry of Finance, special accounts	339	121	186	148	−289
Movements on dollar bonus account of Directorate of Supply (automobiles)	—	—	—	−107	—
Movements on other government accounts	33	−18	−14	−23	11
Total	544	−340	−89	302	212
2. Deposits under special import licensing scheme for piece goods, etc.	−262	−58	126	−10	45
3. Kroner payments for ECA imports	−405	−58	—	—	—
4. Foreign exchange position of National Bank	199	312	−6	−498	−67
5. Other items in balance sheet of National Bank					
Bonds and shares	50	333	34	−11	80
Advances, etc.		−10	38	165	−151
Total	50	323	72	154	−71
Total (1 through 5)	126	179	103	−52	119
Results[2]					
1. Notes in circulation	108	149	152	26	72
2. Deposits of commercial banks, savings banks, etc., with National Bank	18	30	−49	−78	47
Total	126	179	103	−52	119

Source: National Bank of Denmark, *Report and Accounts* (Copenhagen).

[1] No sign indicates outflow from National Bank; minus sign indicates inflow to National Bank.

[2] No sign indicates increase; minus sign indicates decrease.

Both analyses combine the accounts of the National Bank with those of the Government, but the combinations are made in different ways. In the National Bank's analysis of trends in liquidity (see Table 20), changes in direct government accounts with the National Bank (i.e., government deposits and loans to the Government, plus withdrawals from the U.S. counterpart fund accounts) are one of the elements explaining changes in liquidity. The other factors leading to changes are the net foreign exchange position of the National Bank, deposits under the special licensing scheme for imports of textiles (ended in the spring of 1956), and other assets of the National Bank including both government bonds and claims

[2] See, for example, Economic Secretariat of the Government, *Economic Survey of Denmark, 1956* (Copenhagen, 1956), p. 15.

on the private sector. Since liquidity is defined in this table to exclude treasury bills, this analysis is essentially an analysis of reserve money. The items from Table 20 are combined with the outstanding treasury bills in the Bank's analysis of the money supply (shown here as Table 21). In this table, the transactions of the National Bank plus the short-term borrowings by the Government are consolidated to provide a measure of the changes in reserve money and treasury bills (which are easily convertible into reserve money).

The analysis by the Economic Secretariat provides a more direct integration of the accounts of the Government and the National Bank. The tables published by the Secretariat are combined here in Table 22. The Government's total financing requirements (i.e., the Government's total deficits on its current and investment budget and the capital budget, including debt redemption, adjusted for changes in arrears of revenue, expenditure, etc.) are considered to be a factor leading to payments by the Government to the economy. Net purchases of foreign exchange, premium payments under the dollar premium scheme minus net increases in required deposits under the special import licensing scheme for textiles, and National Bank net payments not recorded elsewhere (sundry payments) are the only other factors included in the table. These items provide a total of the

TABLE 21. DENMARK: MONEY SUPPLY, 1951–55

(*In millions of Danish kroner*)

	End of Year				
	1951	1952	1953	1954	1955
Notes	1,817	1,966	2,118	2,145	2,217
Deposits of commercial banks, savings banks, etc., with National Bank	492	522	473	394	441
Treasury bills	17	106	46	9	17
Total	2,326	2,594	2,637	2,548	2,675

Source: National Bank of Denmark, *Report and Accounts* (Copenhagen).

TABLE 22. DENMARK: TRENDS IN LIQUIDITY, 1951–55

(*In millions of Danish kroner*)

	1951	1952	1953	1954	1955
Net payments by Government and central bank					
Government financing needs	646	725	777	787	625
Purchases of foreign exchange (net)	−227	251	−66	−503	−68
Piece goods deposits and dollar export premiums	−262	−58	126	−122	−47
Sundry payments by central bank[1]	—	7	−18	−22	93
Net payments, total	**157**	**925**	**819**	**140**	**603**
Financed through					
Sales of bonds (gross)	102	611	802	447	294
Increase in money supply (net)	55	314	17	−307	309
Increase in money supply (gross)	*121*	*325*	*81*	*−109*	*160*
Less Increase in central bank lending	*66*	*11*	*64*	*198*	*−149*
Financing, total	**157**	**925**	**819**	**140**	**603**

Source: Economic Secretariat of the Government, *Economic Survey of Denmark, 1956* (Copenhagen, 1956), Table 3, p. 14, and Table IX, p. 80.

[1] Excluding security transactions and loans to other banks by the National Bank.

net payments by the Government and the National Bank affecting liquidity. Part of the liquidity creation is considered to be absorbed by the Government's bond issues that are purchased by others than the National Bank, plus the Bank's net sales of bonds. The remaining payments lead to an expansion of the "net money supply." The net money supply differs from the money supply in that the loans of the National Bank are deducted from the money supply to provide a net measure; i.e., these loans are not considered to be an expansive factor but are treated as a deduction from the money holdings in measuring the increase in the economy's liquidity.

DOMINICAN REPUBLIC

Since 1947 the Central Bank of the Dominican Republic has published an external-internal origin analysis of money, including government holdings (summarized here as Table 23). This table also allocates responsibility for the creation of money to the Government, the Central Bank, and the commercial banks. Money of external origin is considered to be measured by one half of the treasury coin in circulation (the import cost of the coin is estimated to equal half of its face value), and the net foreign assets of the Central Bank (including the net IMF position) and the commercial banks. The difference between the total money in circulation and that of external origin is considered to be of internal origin. To allocate responsibility for the money of internal origin, half of the coin circulation is attributed to the Government; the factors of external origin attributed to the Central Bank are deducted from its total monetary liabilities (i.e., including deposits of the commercial banks) to measure central bank responsibility; and the remaining difference, i.e., the deposits with the commercial banks payable by check minus their international reserves and cash, is attributed as a responsibility of the commercial banks.

Beginning in 1956 the Central Bank has also published a more neutral analysis, for which the December 1955 data are shown in Table 24. Aside from including part of the treasury coin in foreign assets, this table does not attempt to allocate the factors of expansion and contraction into external and internal subgroups, nor does it attempt to allocate responsibility to the separate monetary institutions. The factors of expansion comprise the foreign assets measured in the same manner as for Table 23, the part of the treasury coin in circulation not considered to be of foreign origin (i.e., half the amount), and the investments and loans of the Central Bank and of the commercial banks, with no attempt to classify them by sector. Among the factors of contraction, only the saving and time deposits are separated from the other factors.

TABLE 23. DOMINICAN REPUBLIC: MONEY SUPPLY BY ORIGIN AND ISSUING INSTITUTION, 1951–55

(*In millions of Dominican pesos*)

	1951	1952	1953	1954	1955
MONEY SUPPLY	78.4	83.3	76.8	92.3	93.7
External origin	39.6	39.1	37.7	54.1	40.7
Government	*1.0*	*1.1*	*1.1*	*1.1*	*1.7*
Central Bank	*31.0*	*33.5*	*29.5*	*37.1*	*33.0*
Commercial banks	*7.7*	*4.5*	*7.1*	*15.9*	*6.1*
Internal origin	38.8	44.2	39.1	38.2	53.0
Government	*1.0*	*1.1*	*1.1*	*1.1*	*1.7*
Central Bank	*6.4*	*9.3*	*13.1*	*17.5*	*23.0*
Commercial banks	*31.4*	*33.9*	*24.9*	*19.5*	*28.3*

Source: Banco Central de la República Dominicana, *Boletín Mensual* (Ciudad Trujillo).

TABLE 24. DOMINICAN REPUBLIC: EXPANSIVE AND CONTRACTIVE FACTORS OF THE MONEY SUPPLY, DECEMBER 1955

(In millions of Dominican pesos)

	Dec. 1955
MONEY SUPPLY	93.7
Expansive factors	147.7
Foreign assets (net)	*40.7*
Counterpart of treasury coin	*1.7*
Investments	*57.0*
Bank credits	*48.3*
Contractive factors	−54.0
Saving and time deposits	*−36.0*
Other factors	*−18.0*

Source: Banco Central de la República Dominicana, *Boletín Mensual* (Ciudad Trujillo).

ECUADOR

The Central Bank of Ecuador publishes a table, shown here as Table 25, analyzing, by origin, the means of payment, excluding government deposits. The factors of external origin are defined as the net foreign assets of the Central Bank (including in assets the net IMF position, and in liabilities, obligations to residents). The difference between the total money supply and factors of external origin is taken to measure the factors of internal origin.

TABLE 25. ECUADOR: ORIGINS OF MEANS OF PAYMENT, 1951–55

(In millions of sucres)

	1951	1952	1953	1954	1955
MONEY IN CIRCULATION	843	1,038	1,101	1,275	1,226
Internal origin	437	445	614	762	832
External origin	406	593	487	513	394

Source: Banco Central del Ecuador, *Boletín* (Quito).

EGYPT

The National Bank of Egypt prepares a table, shown here as Table 26, analyzing the money supply and its counterpart. This table is essentially a condensed consolidated balance sheet of the monetary system, incorporating a significant netting of liabilities against assets. In the counterpart to the money supply, the consolidated accounts of the monetary system are classified as foreign assets (excluding payments agreement claims on foreigners denominated in Egyptian pounds), loans and discounts (subsectored into government and private, but including, as private loans, payments agreement debit balances expressed in Egyptian pounds), and investments and participations. All the other items in the accounts of the monetary system are grouped together as a residual, including in this residual the quasi-monetary liabilities of the monetary institutions. Because the residual item is significant, and because the foreign assets exclude and the private assets include a few claims on foreigners, it is not possible to obtain a clear separation of the accounts of the monetary system by sector.

TABLE 26. EGYPT: MONEY SUPPLY AND ITS COUNTERPART, 1951–55

(*In millions of Egyptian pounds*)

	1951	1952	1953	1954	1955
Money supply[1]	**461.3**	**424.2**	**418.8**	**442.5**	**458.4**
Private	418.6	406.4	399.0	418.3	434.5
Government deposits[1]	42.7	17.8	19.8	24.2	23.9
Counterpart to money supply	**461.3**	**424.2**	**418.8**	**442.5**	**458.4**
Foreign assets	320.3	258.1	248.3	246.5	212.4
Loans and discounts					
Government	4.6	27.8	37.3	27.2	71.0
Private	133.0	127.1	122.6	156.2	167.1
Investments and participations	21.6	35.4	35.6	39.9	38.0
Residual	−18.2	−24.2	−25.0	−27.3	−30.1

Source: National Bank of Egypt, *Economic Bulletin* (Cairo).

[1] This table covers both Egypt and the Sudan. Through the year 1955, Egyptian banknotes circulated in the Sudan; also Sudanese Government deposits are included in the money supply figures.

EL SALVADOR

The Central Reserve Bank of El Salvador publishes a table, shown here as Table 27, providing an external-internal analysis of the origins of money, including government deposits denominated in national currency. The factors of external origin are defined as the foreign assets of the monetary system (excluding the IMF position) minus foreign liabilities. The difference between the factors of external origin so measured and the total of money is the measure of the factors of internal origin.

TABLE 27. EL SALVADOR: ORIGINS OF MONEY IN CIRCULATION, 1953–55

(*In millions of Salvadoran colones*)

	1953	1954	1955
MONEY IN CIRCULATION	191.7	227.8	242.8
Internal origin	78.7	108.3	139.2
External origin	113.0	119.5	103.6

Source: Banco Central de Reserva de El Salvador, *Memoria* (San Salvador).

FINLAND

The Finnish Ministry of Finance publishes a table, shown here as Table 28, that combines data from the accounts of the monetary system and the Government. While the table is intended to provide an assessment of the factors leading to changes in currency holdings,[1] it also provides data that permit the measurement of broader intersector financial transactions. Changes in the accounts of the Bank of Finland, the commercial banks, the Postal Savings Bank, other financial institutions, and the Government are recorded directly. For each type

[1] See discussion in Ministry of Finance, *Economic Survey, 1955* (Helsinki, 1955), p. 50.

of transaction, the net sum of the directly recorded entries is entered as a residual estimate of the transactions by the private sector and foreigners (the "other" sector). The statement records intersector financing transactions as changes in 15 categories of intersector debts. This statement may be condensed into a table presented here as Table 29. In this summary, similar entries from the original table are brought together to show the borrowing and lending between financial institutions; the transactions associated with government financing requirements;

TABLE 28. FINLAND: MONEY FLOWS IN 1955[1]

(*In billions of markkas*)

	Bank of Finland	Government	Postal Savings Bank	Commercial Banks	Other Credit Institutions	Other
Government debt to Bank of Finland (net)	−5.7	5.7	—	—	—	—
Government short-term credit	—	−2.9	2.5	0.5	....	−0.1
Government domestic bond debt	0.1	−3.4	−1.9	0.1	....	5.1
Other credit by Bank of Finland (net)	−5.3	—	—	9.9	−2.0	−2.6
Other credit by Postal Savings Bank	0.7	—	−4.0	—	....	3.3
Postal Savings Bank's debt on deposit accounts	—	0.3	3.5	—	—	−3.8
Postal Savings Bank's debt on giro accounts	−0.1	—	−1.8	−0.3	....	2.2
Other credit by commercial banks	—	—	—	−26.3	—	26.3
Commercial banks' debt on deposit accounts	—	—	—	14.4	—	−14.4
Commercial banks' debt on checking accounts	—	—	—	1.7	—	−1.7
Other credit by other credit institutions	—	—	—	2.2	−24.2	22.0
Other credit institutions' debt on deposit accounts	—	—	—	—	27.3	−27.3
Other credit institutions' debt on checking accounts	—	—	—	—	0.5	−0.5
Foreign balances (net)	−2.4	0.5	—	0.8	—	1.1
Other payments	10.3[2]	3.3	2.1	−2.4	−1.6	−11.7[2]
Increase or decrease (−) in cash	−2.4	3.5	0.4	0.6	....	−2.1

Source: Ministry of Finance, *Economic Survey, 1956* (Helsinki, 1956).
[1] No sign indicates receipt, and minus sign indicates surrender, of means of payment.
[2] Includes an increase of 6.6 billion markkas in importers' deposits.

TABLE 29. FINLAND: MONEY FLOWS IN 1955 (SUMMARIZED VERSION)[1]

(*In billions of markkas*)

	Bank of Finland	Government	Postal Savings Bank	Commercial Banks	Other Credit Institutions	Other
Government debt to Bank of Finland (net)	−5.7	5.7	—	—	—	—
Government short-term credit	—	−2.9	2.5	0.5	....	−0.1
Government bonds	0.1	−3.4	−1.9	0.1	....	5.1
Interinstitution credit (net)[2]	−7.3	0.3	−0.6	11.8	−4.2	—
Other credit by credit institutions	2.6	—	−3.3	−26.3	−22.0	49.0
Changes in deposit accounts	—	—	3.8	14.4	27.3	−45.5
Changes in giro and checking accounts	—	—	−2.2	1.7	0.5	—
Foreign balances (net)	−2.4	0.5	—	0.8	—	1.1
Other payments	10.3[3]	3.3	2.1	−2.4	−1.6	−11.7[3]
Increase or decrease (−) in cash	−2.4	3.5	0.4	0.6	....	−2.1

[1] Summary of data in Table 28.
[2] This entry combines changes in interinstitution loans and interinstitution deposit holdings but excludes changes in the currency assets and liabilities of these institutions.
[3] Includes an increase of 6.6 billion markkas in importers' deposits.

the changes in foreign asset holdings; the economy's borrowing from the financial institutions and changes in its holdings of deposit money, quasi money (in Finland, deposit accounts are similar to savings and time deposits in other countries), and government securities; and miscellaneous financial transactions. Following the structure of Table 28, increases in liabilities and decreases in assets are considered to be factors increasing cash holdings and are recorded as positive entries, and conversely. The sums of these entries must equal the increase in currency holdings for each sector except that for the Bank of Finland, where a negative entry indicates an increase in the currency outstanding. While foreigners are included with private residents in the "other" sector, the separate presentation of foreign balances provides a measure of the net financing balance between the Finnish economy and foreigners.

FRANCE

Two statements of financial statistics are available for France, one prepared by the National Council of Credit and the second compiled by the Ministry of Finance.

The statement of the National Council of Credit, shown here as Table 30, analyzes the counterparts to privately owned money supply plus time deposits

TABLE 30. FRANCE: COUNTERPARTS TO THE MONEY SUPPLY AND TIME DEPOSITS, 1951–55

(*In billions of French francs*)

	1951	1952	1953	1954	1955
1. Claims on Treasury					
Credit by Bank of France	746	806	939	961	845
Marketable bond	*10*	*4*	*4*	*4*	*4*
Loans	*633*	*648*	*876*	*811*	*700*
Current postal accounts	*28*	*29*	*33*	*45*	*48*
Rediscounts of accrued taxes, etc.	*71*	*121*	*18*	*87*	*76*
Coin held	*4*	*4*	*8*	*14*	*17*
Securities	513	626	702	765	785
Held by Bank of France	*186*	*239*	*259*	*191*	*177*
Held by other banks	*327*	*387*	*443*	*574*	*608*
Credit by business and individuals	312	364	415	504	598
Deposits with postal checking system	*262*	*304*	*358*	*435*	*494*
Deposits with Treasury	*33*	*31*	*35*	*37*	*47*
Coin in circulation	*17*	*29*	*28*	*32*	*57*
Total	1,571	1,796	2,056	2,230	2,228
2. Credit to the economy					
Bank of France	776	944	998	1,122	1,262
Other banks	1,129	1,327	1,520	1,730	2,037
Total	1,905	2,271	2,518	2,852	3,299
3. Gold and foreign exchange					
Gold	191	200	201	201	301
Sight claims on foreigners	22	31	15	57	200
Advances to Exchange Stabilization Fund	66	5	9	136	194
Total	279	236	225	394	695
Total (1 through 3)	3,755	4,303	4,799	5,476	6,222
Net of balance sheet entries not included above	20	−15	−5	−11	−53
TOTAL MONEY SUPPLY AND TIME DEPOSITS	3,775	4,287	4,794	5,465	6,169

Source: Conseil National du Crédit, *Rapport Annuel* (Paris).

TABLE 31. FRANCE: LENDING AND BORROWING, 1955

(In billions of French francs)

A. Lending Accounts

	Enterprises	Households	Government	Foreign	Overseas France	Saar	Treasury	Banks, Insurance, Financial Institutions	Total
Money	290	390	—	—	—	—	—	—	680
Other short- and medium-term claims on Treasury, banks, and financial institutions	180	425	70	—	70	—	—	—	745
Nonbank commercial credit	—	—	—	—	—	—	—	—	—
Marketable securities									
Issues	120	335	—	—	—	—	—	—	455
Redemptions	—	—	—	—	—	—	102	—	102
Purchases	—	—	—	—	—	—	—	39	39
Bank credit and treasury advances	20	—	20	—	—	—	150	445	635
Nonrediscountable long-term loans	40	—	10	—	—	—	179	401	630
Short-term transactions by Treasury, banks, and financial institutions									
Between Treasury and banking system	—	—	—	—	—	—	80	160	240
Other	—	—	—	—	—	—	102	367	469
Foreign lending and borrowing									
Lending and borrowing	—	—	14	40		—	15	—	69
Repayments	35	—	—	—	—	—	145	—	180
Gold and foreign exchange	45	—	—	55	—	—	—	245	345
Financing by Metropolitan France of transactions between foreigners and Overseas France and the Saar	—	—	—	80	25	—	—	—	105
Adjustment	—	—	—	15	265	7	—	14	301
Total lending	730	1,150	114	190	360	7	773	1,671	4,995
Net lending	—	620	—	—	190	—	—	150	960
Net lending of households 620									

with banks. These counterparts are the monetary system's holdings of claims on the Government, claims on the private sector, and foreign exchange and advances to the Exchange Stabilization Fund, plus the credit extended to the Treasury by the private sector, as measured by the privately held claims on the Government included in money. The net miscellaneous entry includes the small changes in the foreign aid counterpart accounts. Rediscounted claims are shown as credit extended by the Bank of France. Since this table is an analysis of the accounts of the Bank of France and the deposit-money banks, no account is taken of the significant quasi-monetary liabilities of other financial institutions.

The Ministry of Finance table, given here as Table 31, provides a statement of all borrowing and lending in the economy. Borrowing and lending are measured not only as changes in loans outstanding, but also as the amounts of money involved in the transfer of securities and other claims from one sector of the economy to another. In this table, intersector transfers are recorded but not intrasector

TABLE 31. FRANCE: LENDING AND BORROWING, 1955

(In billions of French francs)

B. Borrowing Accounts

	Enterprises	Households	Government	Foreign	Overseas France	Saar	Treasury	Banks, Insurance, Financial Institutions	Total
Money	—	—	—	—	—	—	60	620	680
Other short- and medium-term claims on Treasury, banks, and financial institutions	—	—	20	—	—	—	380	345	745
Nonbank commercial credit	—	—	—	—	—	—	—	—	—
Marketable securities									
Issues	260	—	10	—	—	—	110	75	455
Redemptions	18	72	—	—	—	—	—	12	102
Sales	19	20	—	—	—	—	—	—	39
Bank credit and treasury advances	370	185	40	—	—	—	40	—	635
Nonrediscountable long-term loans	280	30	170	—	96	4	40	10	630
Short-term transactions by Treasury, banks, and financial institutions									
Between Treasury and banking system	—	—	—	—	—	—	155	85	240
Other	—	—	—	—	—	—	130	339	469
Foreign lending and borrowing									
Lending and borrowing	40	—	—	—	29	—	—	—	69
Repayments	—	—	—	165	15	—	—	—	180
Gold and foreign exchange	20	—	—	290	—	—	—	35	345
Financing by Metropolitan France of transactions between foreigners and Overseas France and the Saar	—	—	—	25	30	50	—	—	105
Adjustment	59	223	16	—	—	—	3	—	301
Total borrowing	1,066	530	256	480	170	54	918	1,521	4,995
Net borrowing	336	—	142	290	—	47	145	—	960
Net borrowing by enterprises	186	Net borrowing by Government			287	Net borrowing by foreigners			147
Enterprises	*336*	Government			*142*	Foreign			*290*
Banks	*—150*	Treasury			*145*	Overseas France			*—190*
						Saar			*47*

Source: Ministère des Finances, "Rapport sur les comptes de la Nation," *Statistiques et Etudes Financières* (Paris).

borrowing and lending. The table appears after the income and expenditure accounts, as part of a fully integrated set of statements, and is consistent with the national income accounts. In its compilation, data are taken from national income records, the tabulations of the National Council of Credit, and other sources.

The national accounts for France contain, for each sector, an integrated series of statements. The first of these is an account that measures the factors giving rise to gross national production as defined by the Ministry of Finance. A summary of the 1955 entries is given here as Table 32. This account summarizes the income-producing activities of each sector, and subtracts from the total product those payments that are considered to be "costs of production."

TABLE 32. FRANCE: PRODUCTION ACCOUNTS, 1955

(In billions of French francs)

	Enterprises[1]	Households	Government	Foreign	Total
Receipts					
Production	14,299	379	—	—	14,678
Imports	—	—	—	1,700	1,700
Other	841	—	—	—	841
	15,140	379	—	1,700	17,219
Expenditure					
"Costs"	8,850	—	—	—	8,850
Exports	—	—	—	1,985	1,985
Other	57	102	—	—	159
	8,907	102	—	1,985	10,994
Net receipts	6,233	277	—	−285	6,225

Source: Based on data from Ministère des Finances, "Rapport sur les comptes de la Nation," *Statistiques et Etudes Financières* (Paris).

[1] Includes individual enterprises, government-owned enterprises and government production for sale, banks, etc.

This account is followed by a second account that combines the following transactions for each sector: (1) the net receipts from the previous account; (2) the receipts of each sector that are transfers from other sectors (including income payments and tax transactions as transfers); (3) consumption and similar expenditure; and (4) the entries required for reconciliation of the national income accounts and the financing accounts. Of these entries, the most important are (a) equipment and balancing subventions that represent the transfers between the enterprise sector and the government sector arising from the inclusion in the enterprise sector of government-financed production that creates cash surpluses or deficits in government accounts; and (b) the entry for profits reinvested in enterprises by sole proprietors whose "nonproductive" activities are included in the household sector.

Table 33, summarizing the 1955 data, shows the net balance brought forward, the net of all entries other than the equipment and balancing subventions, and the sum of the equipment and balancing subventions.

TABLE 33. FRANCE: ALLOCATION ACCOUNTS, 1955

(In billions of French francs)

	Enterprises[1]	Households	Government[2]	Foreign
Net receipts from production	6,233	277	—	−285
Net intersector transfers	−4,890	1,330[3]	198	138
Equipment and balancing subventions[4]				
From Government	523	—	−523	—
To Government	−372	—	372	—
Savings	1,494	1,607[5]	47	−147

Source: Based on data from Ministère des Finances, "Rapport sur les comptes de la Nation," *Statistiques et Etudes Financières* (Paris).

[1] Includes individual enterprises, government-owned enterprises and government production for sale, banks, etc.

[2] Excludes financing activities of the Treasury and includes foreign and international agencies operating in France.

[3] Net of consumption expenditure.

[4] See text for explanation of these entries.

[5] Of this total, investment by individual proprietors represents 350 billion francs.

The final results of this account are the savings of the enterprise and household sectors, and the surplus (prior to real investment expenditure) of the government and foreign sectors. These entries together with the purchase of real capital, i.e., investment, provide a calculation of the borrowing each sector required or the lending that it was able to undertake. These amounts are estimated in a final income-expenditure account, for which the 1955 entries may be summarized as shown in Table 34.

TABLE 34. FRANCE: SAVINGS-INVESTMENT ACCOUNTS, 1955

(*In billions of French francs*)

	Enterprises[1]	Households	Government[1]	Foreign
Savings	1,494	1,607	47	−147
Investment by individual proprietors	350	−350	—	—
Investment	−2,030	−637	−334	—
Net lending	−186	620	−287	−147

Source: Based on data from Ministère des Finances, "Rapport sur les comptes de la Nation," *Statistiques et Etudes Financières* (Paris).
[1] See Table 33, footnotes 1 and 2.

In Table 31, the net borrowing and the net lending are estimated directly from the financial data, with accumulations of money and quasi money considered as lending. The sectors covered are more detailed than those for which entries are recorded in the income and expenditure accounts. Thus data are given for the banks, insurance companies, and other financial institutions as one financial sector. In this way it is recognized that, while their income-producing activities are relatively unimportant, the actions of financial intermediaries in the borrowing and lending process are of the greatest significance. It might be noted that all financial intermediaries are grouped together in the French accounts. The Monetary System is not considered as a separate sector.[1] The borrowing and lending by local governments, the social insurance fund, government agencies, and foreign administrations are grouped together, but are shown separately from the general financing of the Treasury. Thus the Treasury's financing activities are considered to be separate from other government transactions. The accounts of the foreign sector are segregated into Overseas France, the Saar, and "foreign." In general, the borrowing and lending are classified by liquidity, starting with money and proceeding through an entry that might be considered the equivalent of quasi money, to short-term commercial credit, negotiable securities, loans, and financial transactions with foreigners. Since the national income accounts include accrual transactions, it is necessary to include an entry for the changes in commercial credits outside the banks. While provision is made for this entry, no estimate has been made of the changes in this account. The lack of information regarding this entry may account for part of the discrepancy that is recorded.

FEDERAL REPUBLIC OF GERMANY

The Bank deutscher Länder prepares three analytic financial statements: an analysis of reserve money, a consolidated balance sheet of the monetary system,

[1] In *Rapport sur les comptes de la Nation* (Ministère des Finances, *Statistiques et Etudes Financières*, No. 85–86, Supplément, Paris, January–February 1956), the financial transactions of each of the subsectors of this sector are recorded, i.e., the Bank of France, deposit-money banks, the Agricultural Credit Office, the Caisse des Dépôts, the Crédit National, the National Mortgage Office, insurance companies, etc., and the Central Bank for Overseas France.

and an analysis of financing transactions of each sector. The German Institute for Economic Research has prepared an integrated set of accounts that measure both the national income transactions and their associated financial flows.

TABLE 35. FEDERAL REPUBLIC OF GERMANY: CREDIT INSTITUTIONS' RECOURSE TO THE CENTRAL BANKING SYSTEM, 1953–55

(In millions of deutsche mark)

	1953	1954	1955
A. Influx or efflux of central bank money at credit institutions, as result of changes in items listed below[1]			
Circulation of notes and coin	−1,165	−861	−1,346
Central bank deposits of nonbank customers[2]	−1,143	−1,710	−1,964
Federal Government, Lands, and Equalization of Burdens authorities	*−1,434*	*−1,707*	*−2,049*
Counterpart funds[3]	*355*	*−50*	*62*
Allied agencies	*112*	*115*	*135*
Others (including Central Cash Office of Postal Administration)	*−174*	*−88*	*−112*
Central bank lending to nonbank customers[4] (excluding open market purchases and sales)	−77	19	92
Net balance on accounts for settlement of foreign trade at Bank deutscher Länder	3,747	3,314	2,234
Open market purchases or sales by central banking system	−269	−132	−16
Money market securities of Federal Government issued in exchange for equalization claims of Bank deutscher Länder	—	—	*−125*
Other[5]	*−269*	*−132*	*109*
Other factors	−127	69	191
(Items in course of settlement in central banking system)	(−27)	(−114)	(167)
Total influx or efflux (−) of central bank money	966	699	−809
B. Increase or decrease (−) in credit institutions' deposits with central banking system			
Total of minimum reserves and excess reserves	292	665	498
(Change in minimum reserve requirement)	(388)	(364)	(823)
C. Increase or decrease (−) in recourse to central banking system	−674	−34	1,307
Position at end of year	3,124	3,090	4,398
D. For comparison: Credit institutions' credit balances with central banking system	3,188	3,852	4,350

Source: Bank deutscher Länder, *Report for the Year 1955* (Frankfurt am Main, 1956).

[1] Signs indicate whether the changes in the items recorded in the text column had the effect of an influx or an efflux (−) of central bank money. Factors entailing an influx or an efflux are as follows:

Influx	*Efflux*	
Decrease	Increase	in note and coin circulation
Decrease	Increase	in central bank deposits of nonbank customers
Increase	Decrease	in central bank lending to nonbank customers
Plus movement	Minus movement	in the balance on the Bank deutscher Länder's accounts for settlement of foreign trade
Open market purchases	Open market sales	

The changes in the items recorded under A in the table are taken into account only insofar as they entail an influx or efflux of central bank money at the credit institutions. They are therefore not necessarily identical with the changes in the corresponding items of the combined return of the Bank deutscher Länder and the Land Central Banks.

[2] Including credit balances employed in equalization claims.

[3] Counterpart accounts of the Federal Government and, until January 1955, ERP Special Account of the Berlin Central Bank.

[4] Including cash advances to the Reconstruction Loan Corporation (under a fixed credit line granted for the purpose of providing anticipatory finance for work creation, housing, and investment programs), which cannot be considered as "recourse to the central banking system" in the accepted sense of the term, viz., rediscounts and advances on securities.

[5] Treasury bills and noninterest-bearing treasury bonds acquired on the open market, as far as these did not arise from conversion of equalisation claims of the Bank deutscher Länder (see preceding item), Storage Agency bills, and bonds.

The reserve analysis is covered by a table, shown here as Table 35, which is published in both the Annual and Monthly Reports of the Bank. This table is a reorganization of the balance sheet of the central banking system, with the items grouped into significant aggregates and recorded with subtotals in an order that is intended to demonstrate the effect of changes in the accounts of the central banking system on the aggregate reserve position of the other banks. Increases in liabilities of the central banking system to others than banks and increases in currency are regarded as drains on the credit institutions' holdings of reserves. Increases in the assets of the central banking system, other than loans to banks, are regarded as factors leading to increases in the reserves of credit institutions. The difference between the sum of the factors increasing bank reserves and the sum of the factors decreasing reserves provides a measure of the total influx or efflux of central bank money at the credit institutions. This net change in the position of the other banks plus their borrowings from the central banking system is equal to the change in the credit institutions' reserve deposits (only deposits with the central banks are included in the legal reserves of the deposit-money banks). The part of this change that equals the change in minimum required reserves is shown separately from the total change. This analysis differs from most comparable analyses in that it considers lending to credit institutions as a factor clearly separate from other changes in central bank accounts, and the change in the net of bank cash minus borrowing from the central banks as a significant measure of the effect of central banking policy.

The statement shown here as Table 36 is a consolidated balance sheet for the monetary system, i.e., the Bank deutscher Länder, the Land Central Banks, deposit-money banks (including installment credit insitutions), the Postal Check and Savings Bank Office, the Reconstruction Loan Corporation, and the Finanz A.G., but not small agricultural credit cooperatives. In this table, the domestic liabilities are classified by the degree of their similarity to money; and for each type of liability other than currency, the total amounts outstanding and the private sector holdings thereof are shown. The assets of the banking system, other than foreign assets, obligations of the Government arising out of the monetary reform, and real estate and miscellaneous items, are considered by the Bank to be loans and they are classified as credit extended by the central banking system or by the deposit-money banks. The assets rediscounted by the central banks are recorded as credit extended by the deposit-money banks, and they are excluded from the assets reported as held by the central banks. For the deposit-money banks, assets are classified as short-term and other. For both the deposit-money banks and the central banking system, all assets other than securities and participations (a total that includes intramonetary system items as well as claims on the private sector) are classified as claims on the private or government sectors. Hence, while no consolidated totals are given for claims of the monetary system on the other sectors of the economy, it is possible to derive very close approximations to the correct totals.[1]

The Bank's analysis of sector financing transactions is contained in estimates of "The Formation of Wealth and Its Financing" published annually in the *Monthly Report* and summarized in a table in the Annual Report. The 1954 data are given here in Table 37.[2] The estimates of the Bank measure changes in the assets held by each sector and the financing of these asset changes by saving, borrowing, and transfers. The Bank defines a sector's investment as the net increase in its members' holdings of real assets (measured by national income estimates of gross investment minus depreciation), increases in claims on foreigners, and increases in financial claims on other sectors of the economy. The last are classified by the institutions obligated to the lending sectors, with increases in

[1] See *International Financial Statistics*, "Monetary Survey" for Germany.

[2] The 1954 data are given here, despite the fact that 1955 data have been published, to permit comparison with the estimates of the German Institute for Economic Research.

money, quasi-monetary items, and other claims on banks (excluding securities) shown separately. The structure of the German financial system is such that this sector classification also approximates a liquidity classification of the increases

TABLE 36. FEDERAL REPUBLIC OF GERMANY: CONSOLIDATED CONDITION STATEMENT FOR THE CREDIT INSTITUTIONS, INCLUDING THE CENTRAL BANKING SYSTEM, 1951–55

(In billions of deutsche mark)

	1951	1952	1953	1954	1955
Note and coin circulation[1]	9.32	10.82	11.97	12.78	14.09
Sight deposits, including amounts temporarily employed in equalization claims	13.70	14.96	17.32	21.17	23.70
(Sight deposits, excluding amounts temporarily employed in equalization claims)	(12.77)	(13.29)	(14.20)	(16.44)	(20.12)
Money supply	**23.02**	**25.78**	**29.30**	**33.95**	**37.79**
Foreign assets (net)	1.59	4.54	8.03	10.73	12.64
Loans to nonbank customers	29.92	38.23	48.88	62.23	77.41
Credit institutions outside central banking system	28.77	37.49	48.27	61.50	76.41
Short-term loans	18.71	20.19	22.94	26.19	29.22
Business and private	(15.35)	(18.77)	(21.50)	(24.83)	(27.72)
Public authorities	(0.43)	(0.39)	(0.31)	(0.31)	(0.32)
Treasury bills and noninterest-bearing treasury bonds	(0.93)	(1.03)	(1.13)	(1.05)	(1.17)
Medium- and long-term loans	11.35	15.98	22.75	30.65	40.32
Business and private	(9.69)	(13.48)	(19.02)	(25.34)	(33.40)
Public authorities	(1.66)	(2.50)	(3.73)	(5.31)	(7.12)
Securities and syndicate participations	0.71	1.32	2.58	4.66	6.37
Central banking system	1.15	0.74	0.60	0.73	1.00
Public authorities	1.03	0.60	0.47	0.60	0.89
Cash advances	(0.17)	(0.23)	(0.23)	(0.47)	(0.63)
Treasury bills and noninterest-bearing treasury bonds	(0.86)	(0.37)	(0.24)	(0.13)	(0.26)
Business and private	0.12	0.14	0.14	0.12	0.11
Equalization claims and noninterest-bearing debentures	14.86	14.88	14.91	14.87	13.84
Holdings	13.89	13.17	11.69	10.14	10.26
Equalization claims sold under liability to repurchase	0.98	1.71	3.22	4.73	3.58
Savings deposits	−4.98	−7.40	−11.24	−16.72	−20.67
Time deposits	−5.69	−7.76	−9.94	−9.75	−9.76
Business and private	−3.34	−4.60	−5.58	−4.99	−5.46
Public authorities	−2.35	−3.16	−4.36	−4.76	−4.30
Bank bonds in circulation	−2.22	−3.03	−4.93	−8.48	−11.46
Monies and loans taken	−5.64	−8.45	−11.13	−14.92	−19.11
Counterpart accounts in central banking system	−1.19	−0.74	−0.38	−0.31	−0.25
Other items (net)	−3.63	−4.50	−4.89	−3.70	−4.86
Net total	**23.02**	**25.78**	**29.30**	**33.95**	**37.79**

Source: Bank deutscher Länder, *Monthly Report* (Frankfurt am Main).
[1] Excluding cash holdings of credit institutions but including notes issued in West Berlin.

Table 37. Federal Republic of Germany: Formation of Wealth and Its Financing, 1954

(In billions of deutsche mark)

A. Formation of Wealth

	Private Households	Enterprises	Public Authorities	Foreign Counries	West Berlin and Soviet Zone	Total Wealth Formation[1]	
						Real wealth	Monetary wealth
Formation of material assets (net investments)	—	21.12	3.36	—	—	24.48	—
Increase in claims on foreign countries, West Berlin, and Soviet Zone	—	—	—	2.87	−0.27	2.60	—
Formation of monetary wealth	8.28	3.17	9.04	0.05	0.55	—	21.09
At banks	5.54	1.64	5.35	−0.03	0.16	—	12.66
Sight deposits (including notes and coin)	(0.92)	(2.20)	(1.43)	(−0.04)	(0.16)	(—)	(4.66)
Time deposits	(−0.01)	(−0.35)	(0.39)	(—)	(—)	(—)	(−0.45)
Savings deposits	(4.63)	(0.34)	(0.51)	(—)	(—)	(—)	(5.48)
Other monies placed with banks at medium and long term	(—)	(0.10)	(3.03)	(0.01)	(—)	(—)	(3.14)
At building and loan associations	1.30	0.02	—	—	—	—	1.32
At insurance companies	0.84	0.39	—	—	—	—	1.23
Purchase of securities	0.60	1.12	1.05	—	—	—	2.77
Increase in direct claims	—	—	2.64	−0.49	0.01	—	2.16
On West German debtors	(—)	(—)	(2.24)	(−0.49)	(0.01)	(—)	(1.76)
On foreign countries and West Berlin	(—)	(—)	(0.39)	(—)	(—)	(—)	(0.39)
Other formation of monetary wealth	—	—	—	0.58	0.38	—	0.96
Total	8.28	24.29	12.39	2.93	0.28	27.08	21.09

B. Financing of Wealth Formation

	Private Households	Enterprises	Public Authorities	Foreign Countries	West Berlin and Soviet Zone	Total Financing[1]	
						Savings	Borrowing
Savings	6.95	9.40	10.65	—	—	26.99	—
Transfers of wealth	1.08	−0.07	−0.92	—	—	0.09	—
Borrowing	0.26	14.96	2.67	2.93	0.28	—	21.09
From banks	0.26	9.34	2.37	2.72	—	—	14.69
At long and medium term	(—)	(6.12)	(2.18)	(—)	(—)	(—)	(8.29)
At short term	(0.26)	(3.23)	(0.19)	(—)	(—)	(—)	(3.68)
Credits to foreign countries[2]	(—)	(—)	(—)	(2.72)	(—)	(—)	(2.72)
From building and loan associations	—	0.99	—	—	—	—	0.99
From insurance companies	—	0.65	0.13	—	—	—	0.78
By sale of securities	—	1.08	0.35	—	0.09	—	1.52
Direct loans	—	1.94	−0.18	0.20	0.19	—	2.16
From West German creditors	(—)	(1.94)	(−0.18)	(—)	(—)	(—)	(1.76)
From foreign countries and West Berlin	(—)	(—)	(—)	(0.20)	(0.19)	(—)	(0.39)
Other borrowing	—	0.96	—	—	—	—	0.96
Total	8.28	24.29	12.39	2.93	0.28	27.08	21.09

Source: Bank deutscher Länder, *Monthly Report* (Frankfurt am Main), July 1956.

[1] The aggregate total of real wealth formation or savings cannot be added to the monetary wealth formation or the borrowing, since in an over-all view the financial changes cancel each other out.

[2] Changes in gold and foreign exchange holdings.

in a sector's assets. The borrowing by each sector is also classified by the institutions to which the borrowers are indebted. The intersector transfers that reconcile the financing data with national income measures of net deficits and surpluses are included as part of the financing accounts. These accounts also include international grants from foreign countries and grants to West Berlin. The financial institutions (i.e., the banking system, building and loan associations, and insurance companies) are not included as a separate sector of the economy; rather, they are regarded as a group of financial intermediaries with no direct saving or investing activities.

TABLE 38. FEDERAL REPUBLIC OF GERMANY: CHANGES IN FINANCIAL ASSETS AND LIABILITIES OF ECONOMIC SECTORS, 1954

(In billions of deutsche mark)

	Government	Business	Households	Residential Construction	Foreign	Banks and Other Financial Institutions
INCREASE IN ASSETS	9.0	4.4	8.2	—	0.9	18.5
Notes in circulation	—	0.2	0.5	—	0.1	—
Sight deposits	1.9	2.0	0.2	—	−0.1	—
Time and savings deposits	1.0	−0.1	5.9	—	−0.2	—
Issues of money market securities, loans, bonds, shares, debentures, securities	0.9	0.8	0.6	—	—	2.7
Short-term credits	—	—	—	—	—	3.5
Medium- and long-term credits	—	—	—	—	—	8.7
Claims on Government	—	—	—	—	0.8	1.0
Other assets of banks	—	—	—	—	—	0.5
Government long-term investments	5.0	0.5	—	—	—	—
Operations with West Berlin	0.2	—	—	—	0.3	—
Life insurance	—	—	1.0	—	—	—
Medium- and long-term direct credits	—	0.6	—	—	—	—
Consumer credit, retail trade	—	0.4	—	—	—	—
Long-term credit to, and investments in, foreign countries	—	—	—	—	—	−0.2
Short-term capital movements	—	—	—	—	—	−0.2
Gold and foreign exchange	—	—	—	—	—	2.5
INCREASE IN LIABILITIES	4.0	7.7	0.7	7.3	2.8	18.5
Notes in circulation	—	—	—	—	—	0.8
Sight deposits	—	—	—	—	—	4.0
Time and savings deposits	—	—	—	—	—	6.6
Issues of money market securities, loans, bonds, shares, debentures, securities	0.6	1.2	—	—	—	3.2
Short-term credits	—	3.3	0.1	0.1	—	—
Medium- and long-term credits	1.6	2.5	0.2	4.4	—	—
Government obligations	1.8	—	—	—	—	—
Other obligations to banks	—	0.5	—	—	—	—
Government long-term investments	—	—	—	2.4	—	3.1
Operations with West Berlin	—	0.4	—	—	—	0.1
Life insurance	—	—	—	—	—	1.0
Medium- and long-term direct credits	0.2	—	—	0.4	—	—
Consumer credit, retail trade	—	—	0.4	—	—	—
Long-term credit to, and investments in, foreign countries	—	—	—	—	−0.2	—
Amortization of foreign debt	−0.2	−0.5	—	—	0.7	—
Short-term capital movements	—	—	—	—	−0.2	—
Gold and foreign exchange	—	—	—	—	2.5	—
Miscellaneous	—	0.3	—	—	—	−0.3
Net financing	**5.0**	**−3.3**	**7.5**	**−7.3**	**−1.9**	**—**

Source: Deutsches Institut für Wirtschaftsforschung, *Vierteljahrshefte zur Wirtschaftsforschung* (Berlin).

The sum of the entries for bank loans is larger than the sum of the entries for increases in the community's holdings of claims on banks. This apparent independent investment in financial assets by banks is explained by the inclusion of bank security issues in the entries for "purchase of securities" by the rest of the economy (these securities are not included in the entries for security issues by the rest of the economy). Hence bank loans are offset by the creation of money, quasi money, and securities. The residual entries that account for errors in and omissions from the tables are entered as positive entries in other borrowing and lending, and are small.

The tabulations of the German Institute for Economic Research present an integrated set of accounts that contain consistent data, with relatively few unexplained discrepancies, for the national income accounts and the associated financing transactions. The data for 1954 are given in Table 38, and the relation between the income accounts and the financing accounts is shown in Table 39. As summarized in Table 39, the net income receipts of each sector, its consumption and tax transactions, and the intersector transfers (primarily social security and similar transfers) provide a total of each sector's savings. From this total of savings, the investment expenditure of each sector is deducted to provide an estimate of the amount of the sector's financing transactions. The financing data, however, represent changes in the value of the total assets and liabilities of each sector. Consequently, an adjustment must be made for the revaluations of intersector claims that are still being made in Germany as a consequence of the currency reform and attendant operations (e.g., transfers arising through the operation of the "Share the Burden Fund") and other revaluations and similar adjustments (e.g., adjustment of accounts arising from the allocation of occupation costs). In part, some of these adjustments involve a conversion of the accounts between the Government and the foreign sector from a national income accrual basis to a cash basis. The national income financing total, as adjusted for these items, provides an estimate of the changes in assets and liabilities that would be

TABLE 39. FEDERAL REPUBLIC OF GERMANY: SUMMARY OF NATIONAL ACCOUNTS, 1954

(*In billions of deutsche mark*)

	Government	Social Security Funds	Business	Households	Foreign	Total
Net income receipts	7.2	—	56.2	81.9	23.3	168.6[1]
Consumption	−19.6	−0.4	—	−83.2	−27.5	−130.7
Taxes	34.8	12.1	−37.4	−9.5	—	—
Transfers	−11.8	−9.7	2.2	19.3	—	—
Saving	10.6	2.0	21.0	8.5	−4.2	37.9
Investment	−10.2	—	−26.7	−1.0	—	−37.9
Net financing	0.4	2.0	−5.7	7.5	−4.2	—
Revaluations and intersector adjustment entries	2.0	0.2	−4.0	—	1.8	—
Change in net credit or debtor (—) positions						
As derived from income accounts	2.4	2.2	−9.7	7.5	−2.4	
As derived from financing accounts		5.0	−10.6[2]	7.5	−1.9	
Discrepancy		0.4	−0.9	—	0.5	

Source: Deutsches Institut für Wirtschaftsforschung, *Vierteljahrshefte zur Wirtschaftsforschung* (Berlin).

[1] Gross national product, 145.3, *plus* imports, 23.3.

[2] Housebuilding, 3.3, *plus* other business, 7.3.

shown by direct measurement of sector balance sheets if the national income accounts were accurate and correct sector balance sheets could be derived. The discrepancy line indicates the degree of inconsistency between the two sets of accounts. The relatively small discrepancy may be accounted for, in part, by offsetting errors in the two sets of accounts. In Table 38, the changes in the assets and liabilities of each sector are measured. The net excess (or deficiency) of the increase in assets over the increase in liabilities measures the net "lending" (or "borrowing") by each sector. Increases in money and quasi money are considered to be lending by each of the nonbanking sectors and borrowings by the banks and financial institutions sector. The other borrowings and loans are classified by type of transaction. It should be noted that the summaries reproduced here are taken from a set of detailed accounts that show the transactions of each sector by years but do not bring together in one statement the transactions for all sectors in any one year. The order of the items differs from sector account to sector account. The banks are included in a sector with other financial institutions. Owing to the nature of German banks and to the types of institution included as banks in German monetary statistics, the inclusion of banks with other financial institutions in a single sector is probably more appropriate in Germany than in other countries, where the banking systems are more limited in their operations and the separation of bank accounts from the accounts of other financial institutions provides more information on the amount and sources of monetary expansion during any period.

The analyses of the Bank and the Institute are roughly in agreement. Some of the apparent differences arise from the inclusion of financial institutions as a separate sector in the Institute's analysis. The main differences arise from the Institute's adjustments to the government finance data. The Bank does not make comparable adjustments.

GREECE

The Bank of Greece publishes a table, given here as Table 40, which analyzes the changes in the Bank of Greece accounts that result in changes in the note circulation. The changes in the foreign assets of the Bank of Greece, as measured here, are the changes in the Bank's net foreign exchange holdings as recorded in the Bank's books, i.e., including the effects of changes in exchange rates, as well as changes in foreign holdings. The changes in the net balance of accounts between the Bank of Greece and the Government include the net of the Bank's credits to the Government minus the Government's deposits. The credits by the Bank of Greece are largely credits to the other banks in Greece. The deposits included in this table are

TABLE 40. GREECE: FACTORS AFFECTING THE VOLUME OF NOTE CIRCULATION, 1953–55

(*In millions of drachmas*)

	1953	1954	1955
NOTE CIRCULATION	3,503	3,888	4,951
NET ANNUAL CHANGE	1,027	385	1,063
Foreign exchange	1,353	356	475
State accounts	−837	372	−3,193
Credits	195	808	218
Deposits	−565	−813	−1,239
U.S. aid	192	−555	973
Other	689	217	3,829

Source: Bank of Greece, *Monthly Statistical Bulletin* (Athens).

the deposits of Greek banks and semiofficial institutions with the Bank of Greece. The U.S. aid accounts include both transactions directly associated with U.S. aid transfers and the loans by the Bank of Greece financed with the drachma proceeds of dollars received under the U.S. aid program. In 1955, the large negative entry for state accounts and the positive entry for other items reflect a simultaneous writing down of claims on the Government held by the Bank and surplus accounts of the Bank arising from past revaluations of the drachma.

GUATEMALA

Table 41 below shows an analysis by the Bank of Guatemala of the origin of money, including the deposits of the Government and official agencies. In addition to providing an external-internal origin analysis of money, this table allocates responsibility for its creation to the Bank of Guatemala and to the other banks. The factors of external origin are the net foreign assets of the Bank of Guatemala (including the net IMF position) and of other banks. The difference between the total monetary liabilities of the Bank of Guatemala (including liabilities to the other banks) and its net foreign assets is taken as the sum of the factors of internal origin arising from the activities of the Bank of Guatemala. The difference between the total of money, and the factors of external origin plus the factors of internal origin arising in the Bank of Guatemala, is taken as the sum of the factors of internal origin arising in the other banks.

TABLE 41. GUATEMALA: ORIGINS OF MONEY IN CIRCULATION, 1951–55

(In millions of quetzales)

	1951	1952	1953	1954	1955
MONEY IN CIRCULATION	69.8	73.5	85.4	93.1	103.8
External origin	42.0	44.0	42.4	37.6	52.1
Bank of Guatemala	*41.1*	*43.2*	*41.1*	*36.9*	*51.1*
Other banks	*0.9*	*0.8*	*1.3*	*0.7*	*1.0*
Internal origin	27.8	29.5	43.0	55.5	51.7
Bank of Guatemala	*15.4*	*18.7*	*31.9*	*48.1*	*34.1*
Other banks	*12.4*	*10.8*	*11.1*	*13.4*	*17.6*

Source: Banco de Guatemala, *Boletín Estadístico* (Guatemala City).

HONDURAS

A table published by the Central Bank of Honduras, analyzing the factors of expansion and contraction of the money held by the private sector, is shown below (Table 42). The factors leading to a change in money in circulation are classified as factors of external and of internal origin. These, in turn, are divided between those for which the Central Bank is considered responsible and those for which the commercial banks are considered responsible. The expansive factors of external origin are the gross foreign assets of the Central Bank (including the net IMF position) and the commercial banks. All other assets of the banks are considered to be factors of internal origin; they are classified as "loans" and "other," but with no classification by the economic sectors obligated to the banking system. The contractive factors are the foreign liabilities of the system (including foreign currency deposits of residents) and nonmonetary domestic liabilities that are primarily quasi-monetary deposits but also include capital accounts. For this table, "commercial banks" are the banks included in this category in most Honduran statistics, plus the National Development Bank.

TABLE 42. HONDURAS: ORIGINS OF MONEY IN CIRCULATION, 1951–55

(*In millions of lempiras*)

	1951	1952	1953	1954	1955
Money in circulation	**47.5**	**52.5**	**59.4**	**68.6**	**60.6**
Expansive factors	80.4	92.9	102.9	117.5	113.2
External origin	49.4	50.0	50.6	52.7	42.8
International reserves of Central Bank	*40.6*	*43.8*	*45.5*	*48.6*	*40.0*
International reserves of commercial banks	*5.1*	*4.1*	*4.5*	*4.1*	*2.7*
U.S. coin in circulation	*3.7*	*2.1*	*0.7*	—	—
Internal origin	31.0	42.9	52.3	64.8	70.4
Central Bank	*8.0*	*12.0*	*14.4*	*21.0*	*18.9*
Loans	*(5.3)*	*(4.8)*	*(6.7)*	*(12.7)*	*(8.9)*
Other	*(2.7)*	*(7.2)*	*(7.7)*	*(8.3)*	*(9.9)*
Commercial banks	*23.0*	*30.9*	*37.9*	*43.8*	*51.5*
Loans	*(19.6)*	*(25.2)*	*(31.8)*	*(33.4)*	*(40.7)*
Other	*(3.4)*	*(5.7)*	*(6.2)*	*(10.4)*	*(10.9)*
Contractive factors	32.9	40.4	43.5	48.9	52.5
External origin	1.1	1.7	1.5	0.1	0.1
Central Bank liabilities	—	—	—	—	—
Commercial bank liabilities	*1.1*	*1.7*	*1.5*	*0.1*	*0.1*
Internal origin	31.8	38.7	42.1	48.8	52.4
Central Bank	*11.5*	*15.9*	*15.7*	*15.4*	*13.3*
Nonmonetary liabilities	*(10.9)*	*(15.2)*	*(15.0)*	*(14.6)*	*(11.4)*
Capital and reserves	*(0.5)*	*(0.7)*	*(0.7)*	*(0.8)*	*(0.8)*
Commercial banks	*20.3*	*22.8*	*26.4*	*33.4*	*40.2*
Nonmonetary liabilities .	*(7.3)*	*(7.7)*	*(10.2)*	*(11.7)*	*(16.9)*
Capital and reserves	*(13.0)*	*(15.1)*	*(16.2)*	*(21.7)*	*(23.4)*

Source: Banco Central de Honduras, *Boletín Mensual* (Tegucigalpa).

INDIA

The Reserve Bank of India publishes two analyses of financial transactions. One is an assessment of changes in the accounts of the monetary system; the other is a measurement of the sources and uses of finance by industrial companies.

The summary of the accounts of the monetary system, shown here as Table 43, is one of the most neutral statements provided by any central bank. The sum of the currency and deposits held by the private sector (i.e., excluding central and local government deposits) are recorded in the first part of the table. In the second part, the important assets and liabilities of the banks, other than components of the money supply, are listed. No subtotals are given for groups of data, no adjustments are made for extraordinary transactions, and minor assets and liabilities are not recorded. Hence no attempt is made to indicate causal relations between groups of assets and liabilities and the money supply, or to indicate relations between parts of the banking system (these relations are indicated elsewhere in the *Bulletin* of the Reserve Bank), and the sum of the data is not equal to the money supply.

The statement of sources and uses of company funds, shown here as Table 44, analyzes the net profit, reserve allocation, and investment accounts for the 771 large Indian public companies engaged in industry and commerce. Data are included only for companies that have paid-up capital of at least 500,000 rupees and that publish accounts (i.e., private limited companies are excluded); all foreign companies operating in India are excluded, as are banking, insurance, and investment companies. The retained profits, funds arising from reserve allocations, borrowing, and tax refunds are shown as sources of funds. Purchases of real investments, with fixed capital separated from inventories, purchases of financial assets,

Table 43. India: Variations in the Money Supply and Allied Data, Fiscal Years Ended March 31, 1952–56

(In millions of Indian rupees)

	1951–52	1952–53	1953–54	1954–55	1955–56
Money supply with public					
Currency with public	−1,148	−173	302	823	1,933
Demand liabilities (net) of banks	−537	−187	9	493	681
Other deposits with Reserve Bank[1]	−64	−31	−18	−50	23
Total	−1,749	−391	293	1,266	2,637
Allied data[2]					
Central Government's deposits with Reserve Bank	181	−444	−700	−63	79
Other Governments' deposits with Reserve Bank	−13	−52	427	−23	18
Foreign assets held by Reserve Bank	−1,611	6	293	−230	161
Rupee securities held by Reserve Bank	−191	−208	−585	658	1,727
Loans and advances to Governments by Reserve Bank	−6	24	−28	−1	−5
Other loans and advances by Reserve Bank	446	−344	142	68	321
Bills purchased and discounted by Reserve Bank	−45	51	19	−4	19
Cash on hand and balances with Reserve Bank, of banks	−153	−35	−24	52	77
Time liabilities (net) of banks	−88	354	164	517	426
Advances and bills purchased and discounted in India, of banks[3]	479[4]	−498	81	651	1,479
Investments in government securities by banks[5]	−249[6]	89	181	281	212

Sources: Reserve Bank of India, *Bulletin*, and *Report on Currency and Finance* (Bombay).
[1] Excluding balances held on IMF Account No. I.
[2] Figures are gross variations; no adjustments have been made in respect of extraordinary transactions.
[3] Excluding money at call and short notice; bills relate to inland bills only up to May 7, 1954 and to both inland and foreign bills thereafter.
[4] Includes money at call and short notice.
[5] At book value; include treasury bills and treasury deposit receipts.
[6] Relates to scheduled and reporting nonscheduled banks only.

Table 44. India: Sources and Uses of Funds by 771 Companies, 1951–53

(In millions of Indian rupees)

	1951	1952	1953
Sources of funds			
Paid-up capital[1]	67.8	31.8	82.5
Reserves[2]	274.9	99.5	105.4
Depreciation	249.7	240.2	237.7
Taxation reserve	134.7	−46.7	34.3
Borrowing	366.5	−97.8	1.9
From banks	*230.2*	*−125.5*	*−69.2*
Due to trade	*92.5*	*−29.7*	*−22.0*
Debentures	*18.7*	*−16.2*	*7.0*
Mortgages	*5.3*	*35.0*	*69.5*
Other	*19.8*	*36.6*	*16.6*
Excess profit tax refunds	35.2	47.4	6.7
Unidentified sources	112.9	43.9	20.0
	1,241.7	**318.3**	**488.5**
Uses of funds			
Gross fixed assets	327.3	459.5	483.9
Inventories	601.6	−186.3	−142.8
Receivables	208.2	−37.4	41.6
Advance of income tax	69.6	24.1	27.0
Investments	25.1	58.4	28.6
Cash	9.9	—	50.2
	1,241.7	**318.3**	**488.5**

Source: Reserve Bank of India, *Bulletin* (Bombay), April 1956.
[1] Excluding capitalized reserves.
[2] Excluding depreciation and taxation reserves.

with three types of asset specified, and changes in money are shown as uses of funds. The table provides a measure of the borrowing, lending, and investment transactions of the companies included in the survey. These transactions are measured from the partial accounts of the company sector rather than from the accounts of the financial system. This approach is novel for an underdeveloped country. As in most of the published borrowing and lending statements, the data contained in this survey are available only with considerable delay. The 1953 data were published in the April 1956 issue of the *Bulletin*. The explanatory article accompanying the table gives the composite balance sheets from which the analysis is derived and associated data for some of the entries (e.g., security issues and their rates of interest, and summarized income, expenditure, profit, and dividend accounts). Information is also provided on the transactions of the companies in each of 32 industries.

INDONESIA

Two statements published by the Bank Indonesia are shown here as Tables 45 and 46. These statements are consolidated balance sheets of the monetary system, in aggregate and in comparative form, that analyze the total of, and changes in, privately held money.

From Table 45 it is possible to derive totals for the claims of the monetary system on the government, the private, and the foreign sectors. The foreign assets are net of foreign liabilities; at the end of 1955, these amounted to almost half of gross foreign holdings. The nonmonetary liabilities of Indonesian banks include a significant amount of liabilities that are not quasi-monetary. Time and savings deposits amount to less than half a billion rupiah, whereas capital accounts of the banks exceed one billion rupiah.

TABLE 45. INDONESIA: MONETARY BALANCE SHEET, 1951–55

(*In millions of rupiah*)

	1951	1952	1953	1954	1955
Currency issued by Government (less banknote balances with government pay offices)	311	255	340	480	574
Advances of Bank Indonesia to Government	1,359	4,730	5,309	8,472	8,332
Treasury notes and bills with banks	56	63	114	153	174
Domestic, nongovernment credits granted by banks	2,152	2,445	2,394	2,826	4,017
Gold and foreign exchange holdings	2,074	1,799	2,025	1,758	2,771
Sundry items	1,027	481	416	750	1,018
	6,979	9,773	10,598	14,443	16,886
Currency in circulation					
Banknotes	3,139	4,209	5,030	7,270	8,474
Less Banknote balances with Government	108	171	160	146	202
	3,031	4,038	4,870	7,124	8,272
Government notes	349	320	367	470	599
Coin	70	106	133	156	177
Less Cash balances with banks	122	115	152	208	217
	3,328	4,349	5,218	7,542	8,831
Demand deposits, domestic creditors	1,706	2,255	2,269	3,419	3,947
Total money supply	5,034	6,604	7,487	10,961	12,778
Nonmonetary liabilities of banks	1,945	3,169	3,111	3,487	4,108
	6,979	9,773	10,598	14,443	16,886

Source: Bank Indonesia, *Report for the Year* (Djakarta).

Table 46 not only records the changes in the items aggregated in the monetary balance sheet, but also includes adjustment entries. The change in the foreign exchange holdings for 1953 is not the change in the rupiah value of the system's foreign assets, but the increase in the value of these holdings minus the profit that the Bank Indonesia obtained on the revaluation of its gold holdings. This profit item is added to the net increase in the government debt to the banking system, as the profit was transferred from the Bank to the Government. Thus the change in foreign exchange holdings measures the net surrender of rupiah by the economy to the monetary system, associated with the decline in Indonesia's foreign assets during 1953. The sum of the profit on the gold revaluation and the increase in the government debt to the banking system provides a measure of the finance made available to the Government through the operation of the monetary system.

TABLE 46. INDONESIA: CAUSES OF CHANGES IN THE MONEY SUPPLY, 1952–55

(In millions of rupiah)

	1952	1953	1954	1955
A. Government finance				
Government debt with Bank Indonesia	....	580	3,162	−140
Treasury bills with banks	....	53	39	21
Currency issued by Government (less banknote balances with government pay offices)	....	85	141	94
	5,665	718	3,342	−25
Adjustment: Profit on gold	—	1,734	—	—
Total	5,665	2,452	3,342	−25
B. Domestic credits granted by banks				
To semigovernment institutions	170	−272	160	86
To private business and individuals[1]	122	222	273	1,105
Total	292	−50	433	1,191
C. Foreign exchange holdings				
Gold holdings with Bank Indonesia	....	−1,025	−596	−102
Ready foreign exchange position of Foreign Exchange Fund	....	−237	608	760
Foreign bills and balances of banks	....	−298	−281	354
Total	−3,230	−1,560	−269	1,012
Total (A + B + C)	**2,727**	**842**	**3,506**	**2,178**
D. Miscellaneous causes				
Margin deposits with banks	....	−63	−79	58
ECA, IMF, and IBRD funds	....	34	218	18
Capital and reserves of banks	....	319	75	130
Time deposits	....	34	9	26
Claims of Government on Foreign Exchange Fund	....	−280	−32	—
Foreign creditors (Rurni)	....	40	−32	−2
Sundry accounts	....	−124	−127	131
Total	1,181	−40	32	361
E. Money supply	1,546	882	3,474	1,817
Total (D + E)	**2,727**	**842**	**3,506**	**2,178**

Source: Bank Indonesia, *Report for the Year* (Djakarta).
[1] Including participations and discounting of bills.

ISRAEL

A statement analyzing the principal factors leading to changes in money, excluding government deposits, prepared by the Bank of Israel, is shown here as

Table 47. Changes in the indebtedness of the economic sectors to the monetary system are considered to be the significant factors producing changes in money. The entry for conversion of foreign currency into Israel currency is the increase in the foreign assets of the monetary system, less increases in the system's foreign currency liabilities, including liabilities to residents. The net expansion of bank credit to the Government records the total increase in the monetary system's claims on the Government (other than security holdings) less increases in government deposits (other than the special deposits with banks intended to cover bank financing of loans to the private sector). Bank credit to the public excludes loans made by the banks to the private sector against these countervailing deposits by the Government. The loans financed from these deposits are entered as a deduction from the deposits made for this purpose by the Government. The entry for these net deposits by the Government also includes government time deposits.

TABLE 47. ISRAEL: FACTORS CAUSING CHANGES IN THE MONEY SUPPLY, 1955

(In millions of Israel pounds)

	1955
Conversion of foreign currency into Israel currency	26.1
Net expansion of bank credit to Government	21.5
Expansion of bank credit to public	20.0
Increased investment of banking institutions in government securities	3.2
Increased investment of banking institutions in other securities	0.8
Net decrease in government deposits earmarked for loans	6.2
Increase of funds in transit between banking institutions	7.4
Increase in time deposits held by public	−21.1
Other factors	7.1
TOTAL INCREASE IN MONEY SUPPLY	71.2

Source: Bank of Israel, *Annual Report, 1955* (Jerusalem, 1956).

ITALY

The Bank of Italy publishes in two parts a table covering the flow of savings and the money supply. One part, shown here as Table 48, is a summary statement; the other part, given here as Table 49, is a detailed statement of the underlying data. The data in these two tables measure the flow of borrowings and lendings within the economy, organized to "account" for changes in Bank of Italy currency in circulation.

Table 48 shows the total borrowing and loans within the economy. The borrowing items are separated into those of the Government and those of the private sector, including government enterprises (i.e., the rest of the economy). Within each of these separations, the borrowings from domestic sources—the Bank of Italy, the rest of the monetary system (banks, savings banks, and banking associations), the Post Office Savings Fund, insurance companies, and other financial institutions (including the capital market)—are separated from the "borrowing" abroad (including the sale of foreign exchange and gold to the monetary system, i.e., the Foreign Exchange Control Office). The incorporation of the balances of transactions with foreigners in domestic borrowings results in there being no separate entries for net borrowing transactions between the domestic economy and the foreign sector. For the Government, the borrowings from others than the Bank of Italy are totaled separately. The Government's borrowing from the Bank of Italy less increases in the Treasury's account with the Bank are shown as a separate entry, along with the Treasury's transactions with foreigners (including foreign aid received). All the data except those for the capital market are

TABLE 48. ITALY: FLOW OF SAVINGS AND THE MONEY SUPPLY, 1951–55[1]

(In billions of Italian lire)

	1951	1952	1953	1954	1955
FUNDS BORROWED BY TREASURY FROM					
Commercial banks, savings banks, and banking associations	99.4	145.7	142.0	153.4	163.1
Central Post Office Savings Fund	65.6	76.3	87.3	14.7	3.5
Social security and insurance institutions	3.6	5.7	4.1	19.1	−0.5
Long-term credit institutions and capital market	69.5	58.5	77.7	142.4	158.1
	238.1	286.2	311.1	329.6	324.2
Foreign aid	216.7	142.5	74.0	19.7	20.0
Other accounts at Bank of Italy	−33.5	41.8	46.4	109.0	99.6
Italian Foreign Exchange Control Office, gold and foreign exchange	—	—	21.6	−5.0	1.4
Government notes and coins	—	—	—	1.5	0.4
	421.3	470.5	453.1	454.8	445.6
FUNDS BORROWED BY ECONOMY FROM OR THROUGH					
Bank of Italy	−17.3	−3.1	35.1	13.9	10.2
Commercial banks, savings banks, and banking associations	325.8	590.8	549.8	488.3	575.3
Central Post Office Savings Fund	52.7	100.1	93.9	103.1	105.0
Social security and insurance institutions	41.2	47.8	89.3	80.8	104.5
Long-term credit institutions and capital market	126.5	171.1	232.7	266.3	292.0
	528.9	906.7	1,000.8	952.4	1,087.0
Italian Foreign Exchange Control Office, gold and foreign exchange	221.9	−25.1	−50.1	8.9	57.6
International aid	6.2	1.0	—	—	—
	757.0	882.6	950.7	961.3	1,144.6
	1,178.3	1,353.1	1,403.8	1,416.1	1,590.2
SOURCES OF FUNDS					
Savings deposits	191.7	292.0	302.8	338.1	371.1
Other bank accounts	51.9	36.5	102.1	75.9	60.4
Post Office savings	107.5	166.6	183.8	117.1	95.4
Social security and insurance institutions	44.8	53.5	93.4	99.9	104.0
Long-term credit institutions and capital market	196.0	229.6	310.4	408.7	450.1
Bank of Italy's current accounts and cashier's checks	−3.8	6.3	−6.2	0.3	19.1
Banks' current accounts and checks	271.5	356.2	287.4	236.5	339.3
Post Office's current accounts	10.8	9.8	−2.6	0.7	13.1
	870.4	1,150.5	1,271.1	1,277.2	1,452.5
Foreign aid	181.7	119.2	68.4	50.2	4.3
Cash and available balances[2]	0.4	6.3	3.5	1.7	0.4
Circulation of notes and coins	126.6	89.7	67.8	90.4	133.8
	1,178.3	1,353.1	1,403.8	1,416.1	1,590.2

Source: Bank of Italy, *Report for the Year* (Rome).
[1] Excluding loans in foreign currencies and current accounts in foreign countries.
[2] If negative, the figures should be added to the funds available and if positive, deducted.

taken from the records of lenders. The capital market entries are the total net issues of securities as recorded by borrowers, minus the identifiable purchases of these issues as recorded in the accounts of lenders.

Since the total borrowings by the economy less the net borrowings from foreigners are included in the borrowing accounts, their sum must equal the total loans

TABLE 49. ITALY: FLOW OF SAVINGS AND THE MONEY SUPPLY, DETAILED STATEMENT, 1955

(In billions of Italian lire)

	Destination			Source		Residual Effect on Currency Circulation
		To the Economy				
	To the Treasury	Shares and debentures	Loans and advances	Excluding current accounts	Current accounts	
BANK OF ITALY[1]						
1. Rediscount: Syndicate for Advances on Industrial Securities			−3.5			
2. Rediscount: Agricultural credit institutions and sections			17.5			
3. Direct discounts			—			
4. Advances to special institutions			−1.0			
5. Advances to private customers			−2.8			
			10.2			
6. Current accounts					15.1	
7. Cashier's checks, checks, and other sight liabilities					4.0	
8. Minor items				8.6		
				27.7		−17.5
BANKS AND SAVINGS BANKS						
9. Deposits at Treasury	−22.1					
10. Treasury bills through Bank of Italy for statutory reserves	59.0					
11. Treasury bills direct for statutory reserves	57.9					
12. Other government securities for statutory reserves	−0.3					
13. Other treasury bills	−38.2					
14. Other government securities	70.9					
	127.2					
15. Loans and investments	31.7	14.4	515.8			
16. Savings deposits and current correspondence accounts				371.1	309.5	
17. Cashier's checks and checks					10.1	
18. Net surplus on minor asset and liability items				51.8		
				742.5		
19. *Less* Cash and available balances[2]				30.4		
				712.1		
TRANSACTIONS WITH BANK OF ITALY						
20. Rediscounts						−6.2
21. Advances taken						−5.0
22. Deferred payments at clearing houses						−2.6
23. *Less* Uninvested deposits for statutory reserves						4.2
24. *Less* Other deposits						5.0
						−23.0
BANKING ASSOCIATIONS						
25. Deposits at Treasury	2.4					
26. Treasury bills	2.5					
CENTRAL POST OFFICE SAVINGS FUND						
33. Deposits at Treasury	4.5					
34. Treasury bills	—					
35. Other government securities	—					

28. Deposits at Treasury	—					
29. Treasury bills	2.5					
CENTRAL POST OFFICE SAVINGS FUND						
33. Deposits at Treasury	4.5					
34. Treasury bills	—					
35. Other government securities	—					
	4.5					
36. Loans and investments	−1.0	—	105.0			
37. Post Office savings and current accounts				95.4	13.1	
				108.5		
INSURANCE COMPANIES						
38. Deposits at Treasury	−4.0					
39. Government securities	3.5					
40. Loans and investments	—	18.1	86.4			
41. Actuarial reserves				104.0		
LONG-TERM CREDIT INSTITUTIONS AND CAPITAL MARKET						
42. Treasury bills	−10.7					
43. Other government securities	129.4					
	118.7			118.7		
44. Debentures issued by Institute for Industrial Reconstruction		14.5				
45. Debentures issued by long-term institutions	71.0	158.7				
46. Time deposits of long-term institutions		13.2				
47. Issues of industrial debentures		3.6				
48. Share issues		162.5				
	71.0	352.5				
49. *Less* Securities already included in items 15, 28, 36, 40, and other duplications	31.6	60.5				
	39.4	292.0		331.4		
	324.2	334.2	752.8	1,081.0	371.5	−40.9
		1,087.0		1,452.5[3] / 1,452.1[3]		
BANK OF ITALY[4]						
50. Current account of Foreign Exchange Control Office, gold, and foreign exchange	1.4		57.6			59.0
51. Foreign aid	20.0			4.3		15.7
52. Other accounts with Treasury	20.3					20.3
53. Current account for treasury service	79.3					79.3
	445.2					133.4
54. Collections in respect of budget receipts	2,308.5					0.4
55. Minor treasury transactions	−53.0					
56. Payments in respect of budget expenditure	2,700.7					
		334.2	810.4	1,085.3	371.5	133.8
		1,144.6		1,456.8[3] / 1,456.4[3]	505.3	

Source: Bank of Italy, *Report for the Year* (Rome).

[1] Transactions with special institutions and private customers.
[2] Excluding balances with the Treasury and the Bank of Italy.
[3] The first total is the sum of the borrowing data; the second total is the sum of the lending data and changes in the currency circulation.
[4] Transactions in foreign exchange and with the Treasury.

by the economy. These are shown as "sources of funds"; deposits in banks, which in most countries would be classed as money, are included among the sources. The items that are considered to be of a savings nature (savings deposits, bank accounts other than current accounts, savings accounts at the Post Office, and the balance of transactions with insurance companies) are included at the beginning of the list; and those items that are considered either as semisaving or semimonetary (current accounts and outstanding cashier's checks) are placed at the end. There are intermediate entries (transactions with long-term credit institutions and the capital market) appearing in both the borrowing and source of funds sections of the table; these record transactions outside the monetary system arising from the issue or redemption of securities. They are intraprivate-sector entries rather than intersector financing entries. The difference between the total borrowings of the economy and the saving and semisaving transactions must equal the foreign aid received by the economy and the increase in currency circulation. These are the only financing items, or financial assets available to the Italian economy, that are not included among the other sources of funds. These items, together with the adjustment for the interbanking system transactions (cash and available balances), provide the balancing entries that equate the total source of funds to total borrowings. The interbank adjustment is required because the total liabilities of both the Bank of Italy and the other banks, including interbank items, are included as a source of funds. For the foreign aid entries, the aid given to the economy, as measured by deposits to counterpart funds, is included in the sources of funds; and the provision of finance to the Treasury, as measured by the withdrawals from counterpart funds, is included in the borrowings. Thus the summary table seeks to demonstrate the borrowings by the economy and the sources from which these borrowings were obtained. The latter are measured by the increases in the financial assets of the private sector of the economy that provide the funds for these borrowings.

In the detailed statement (Table 49), information is given on the transactions that underlie the summary statement. The borrowings by the economy and the increase in the financial assets of the private sector arising from transactions with the monetary system (with each part identified), the Post Office Fund, the insurance companies, and the capital market are specified. The transactions of the Government and the private sector with each of these institutions are listed separately. For the private sector, the issue of shares and debentures is separated from other borrowing through loans and advances. The accumulations of financial assets in current accounts and currency (i.e., in "semimonetary" or "monetary" form) are separated from other accumulations of financial assets. The table also provides data on the transactions within the financial system, i.e., it indicates, among other things, the changes in the accounts between the Bank of Italy and the deposit-money banks. Finally, for the Treasury, but not for the private sector, the total receipts and expenditures on budgetary accounts and the net balance on other accounts are shown to reconcile the government finance data with the financing of the surplus or deficit; but since the net issue (or redemption) of securities to finance the deficit (or surplus) is included in the capital market section, the reconciliation may be more apparent than real.

JAPAN

Two tables analyzing monetary and financial data, published by the Bank of Japan, are summarized here as Tables 50 and 51. In one of the tables (Table 50), the Bank of Japan records the changes in the money supply and its components, and the asset and liability data that are the counterparts to money in the accounts of "financial institutions." Here, the Bank defines the money supply as including currency, current and ordinary deposits, and deposits at notice, less checks and bills held by financial institutions. This coverage—which is somewhat broader

TABLE 50. JAPAN: MONEY SUPPLY FACTORS, 1952–55

(In billions of yen)

	1952	1953	1954	1955
Changes in				
Currency in circulation outside financial institutions	59.2	51.8	−6.9	42.1
Current deposits	187.3	25.7	10.1	142.6
Ordinary deposits	134.0	121.4	58.5	86.8
Deposits at notice and special deposits	77.1	52.3	22.6	74.7
Checks and bills held by financial institutions	−133.6	0.8	−28.8	−91.1
Changes in money supply	**324.0**	**252.0**	**55.5**	**255.1**
Factors causing increase or decrease				
Treasury accounts	69.7	−3.6	86.2	294.5
Foreign exchange accounts	*38.4*	*−49.3*	*−32.7*	*159.1*
Treasury account	*31.3*	*45.7*	*118.9*	*135.4*
Loans	777.1	721.4	346.4	437.8
Securities	76.3	113.9	62.2	90.1
Savings and time deposits	−457.9	−454.6	−373.3	−453.4
Designated domestic deposits	−37.1	14.7	23.0	—
Bank debenture issues	−43.4	−50.8	−28.0	−20.9
Capital accounts	−59.9	−83.4	−78.0	−61.4
Interfinancial institution transactions	−24.1	−23.7	14.3	−66.7
Other	23.3	18.1	2.7	35.1
Total	**324.0**	**252.0**	**55.5**	**255.1**

Source: Bank of Japan, *Economic Statistics Monthly* (Tokyo).

than that in another table on Cash and Deposit Currency published by the Bank in its *Economic Statistics Monthly*—indicates that the definition of money supply used probably includes some items that would be considered as quasi money in other countries. However, the changes in the most important quasi-monetary deposits (time and savings deposits) are included as offsets to the asset data. The institutions covered are the Treasury, the Bank of Japan, all commercial banks, mutual loan and savings banks, credit associations, the Central Cooperative Bank of Agriculture and Forestry, and the Central Bank for Commercial and Industrial Cooperatives. Thus "financial institutions" include some institutions that might be considered as "related institutions" in other countries. The balance of receipts and payments of treasury accounts represents the net borrowing by the Government from the Bank of Japan plus the net decrease in its deposit account with the Bank. Since the foreign exchange account is included with other government accounts, the net balance of treasury accounts includes the results of changes in the economy's foreign reserves. However, transactions arising from the purchase and sale of foreign exchange are shown separately; hence the domestic currency equivalent of the change in Japan's foreign assets is reported, and the net financing of the Government on other accounts by the Bank of Japan may be derived. To the extent that the financial institutions hold government securities, the remaining accounts show not only changes in the credit extended to the private sector of the economy, but also a small element of change in holdings of claims on the Government. However, the amounts of government securities held by the financial institutions are quite small, so that it is possible to arrive at a reasonable approximation to the changes in the claims on the private sector held by the financial institutions.

Table 51 shows the sources from which the business sector of the economy borrowed, including intrasector borrowings. The data indicate the net issue of stocks and shares and industrial debentures that have been purchased by the financial institutions, the personal sector of the economy, or other parts of the business sector. The remaining obligations of the business sector held by financial insti-

tutions, or in government accounts, are shown as "loans and discounts." Thus it is possible to derive an estimate of the total (but not the net) borrowing by the business sector of the economy, but it is not possible to determine which sectors of the economy lent to the business sector.

TABLE 51. JAPAN: SUPPLY OF INDUSTRIAL FUNDS, 1953–55

(In billions of yen)

	1953	1954	1955
Stocks and shares	165.8	142.1	97.5
Industrial debentures	41.3	18.4	26.5
Loans and discounts	857.7	432.4	555.2
Financial institutions			
All banks	*513.6*	*211.9*	*246.7*
Others	*228.2*	*173.1*	*219.5*
Government financial institutions			
Japan Development Bank	*63.7*	*32.1*	*24.5*
Export-Import Bank of Japan	*1.0*	*17.4*	*15.4*
People's Finance Corporation	*6.7*	*5.5*	*8.8*
Agriculture, Forestry, and Fishery Finance Corporation	*14.2*	*26.9*	*13.4*
Small Business Finance Corporation	*3.1*	*18.3*	*12.7*
Special accounts for financial purposes			
Trust Fund Bureau	*2.9*	*16.4*	*8.1*
(Special Account for Industrial Investments)[1]	*(5.5)*	*(10.5)*	*(8.0)*
Special Account for Finance of Settlers	*1.4*	*1.2*	*0.8*
Funds accruing from purchases of U.S. agricultural commodities	—	—	*14.3*
Bank of Japan's special loans in foreign currency	*29.4*	*−70.0*	*−9.1*
Bank of Japan's foreign exchange loans	*−0.5*	*−0.4*	—
Total	1,064.8	592.9	679.2

Source: Bank of Japan, *Economic Statistics Monthly* (Tokyo).

[1] Capital subscriptions to the Electric Power Development Company. These figures are included in "Stocks and shares."

REPUBLIC OF KOREA

The Bank of Korea publishes a table analyzing the principal factors increasing or decreasing money, excluding government deposits, but including nonchecking demand deposits of the private sector and local governments that in other countries might be considered quasi money. This table, shown here as Table 52, is an analysis of the accounts of the monetary system that explains changes in money. The quasi-monetary liabilities of the system, as defined by the Bank, are treated as separate and identifiable deductions from the system's assets, but the Government's monetary holdings are netted against direct loans to the Government. The table does not show totals for either the aggregate of transactions with individual sectors, or by parts of the monetary system. Yet it is possible to derive the major components of the outstanding balances between the monetary system and the Government or the private sector.[1] Similarly, it is possible to derive the balance of transactions of the rest of the economy with the Bank of Korea or the other banks. All the securities held by the monetary system are the direct obligations of, or are guaranteed by, the Government. The borrowings by the Korean Reconstruction Bank from the Government are similar to government deposits with the Korean Reconstruction Bank and are included as an adjusting entry.

[1] See *International Financial Statistics*, "Monetary Survey" for Korea.

TABLE 52. REPUBLIC OF KOREA: PRINCIPAL FACTORS DECREASING OR INCREASING THE MONEY SUPPLY, 1951–55

(In billions of hwan)

	1951	1952	1953	1954	1955
MONEY SUPPLY	7.30	14.32	30.32	58.08	93.52
Government overdrafts from Bank of Korea less government deposits in Bank of Korea	4.31	5.96	11.49	31.14	52.73
Loans by all banks except Bank of Korea					
Private	2.18	6.39	17.89	29.33	64.29
Local government and public organizations	0.07	0.10	0.25	0.50	1.16
Loans by Bank of Korea					
Private	0.27	0.23	0.73	0.43	0.66
Government agencies	0.55	1.38	1.85	0.54	0.70
Securities held by Bank of Korea	0.02	0.02	0.13	7.12	17.65
Securities held by all other banks	0.07	0.21	0.64	1.27	2.03
Purchases of foreign exchange by Bank of Korea	0.07	0.12	1.26	1.53	1.93
Industrial funds borrowed from Government by Korean Reconstruction Bank (decreasing factor)	−0.05	−0.06	−0.05	−7.34	−26.56
Savings and time deposits (decreasing factor)	−0.13	−0.27	−2.38	−3.86	−6.99
Deposits of foreign organizations	−0.09	−0.08	−0.38	−1.39	−12.63
Other	0.03	0.32	−1.11	−1.19	−1.45

Source: Bank of Korea, *Monthly Statistical Review* (Seoul).

MEXICO

The Bank of Mexico publishes a table that analyzes the changes in the privately owned money on a dual basis by external-internal origin and by issuing institutions. The 1955 data are given here in Table 53. The data cover all the financial institutions that are considered by the Bank of Mexico to be banks, including long-term lending institutions that in other countries might be considered part of the nonbanking financial system. The data for the privately owned institutions —i.e., the deposit and savings banks that are comparable to deposit-money banks in other countries and the other private financial institutions that in most other countries would be considered as related institutions—are added to constitute one subtotal. To this subtotal, data are added for the Bank of Mexico and for the other government-owned banks that are akin to development institutions in other countries. The final total provides a consolidated statement for the "monetary system." Changes in the holdings of gold, foreign exchange (including the net IMF position), and silver are considered to be factors of external origin. The remaining factors, considered to be of internal origin, are analyzed by type of account. However, for assets of the type where both the Government and the private sector may be obligated to the financial system, the claims on the Government are separated from those on the private sector (except for the "other" entry, which cannot be allocated).

TABLE 53. MEXICO: CHANGES IN MONEY IN CIRCULATION, BY ORIGINS AND CREDIT INSTITUTIONS, 1955[1]

(In millions of Mexican pesos)

	Private Institutions			Government Institutions		
	Deposit and savings banks	Others	Total	Bank of Mexico	Others	Total
MONEY IN CIRCULATION	1,295.4	—	1,295.4	466.9	29.3	1,791.6
Notes	—	—	—	608.7	—	608.7
Coins	—	—	—	−162.9	—	−162.9
Checking accounts	1,295.4	—	1,295.4	21.1	29.3	1,345.8
ORIGINS OF MONEY IN CIRCULATION						
External	2.5	−6.9	−4.4	2,533.8	10.1	2,539.5
Gold, silver, and foreign exchange	2.5	−6.9	−4.4	2,533.8	10.1	2,539.5
Internal	1,292.9	6.9	1,299.8	−2,066.9	19.2	−747.9
Investment in securities	416.2	49.2	465.4	−439.4	−132.1	−106.1
Government	*363.5*	*−4.0*	*359.5*	*−292.2*	*−71.5*	*−4.4*
Business and individuals	*52.9*	*53.2*	*106.1*	*−147.2*	*−60.6*	*−101.7*
Credits	738.1	328.6	1,066.7	−497.1	567.7	1,137.3
Government	—	—	—	*−30.2*	—	*−30.2*
Business and individuals	*738.1*	*328.6*	*1,066.7*	*−466.9*	*567.7*	*1,167.5*
Checking account (Federal Government)	—	—	—	−194.2	—	−194.2
Other deposits and liabilities	−366.4	−256.8	−623.2	24.7	−416.6	−1,015.1
Capital	−92.4	−75.6	−168.0	—	−13.9	−181.9
Contribution by Government	—	—	—	—	*−11.8*	*−11.8*
Contribution by business and individuals	*−92.4*	*−75.6*	*−168.0*	—	*−2.1*	*−170.1*
Earned surplus	−6.3	−12.8	−19.1	−2.3	−145.3	−166.7
Surplus	−21.8	−17.6	−39.4	−38.2	52.8	−24.8
Other items	32.2	−26.3	5.9	−90.5	14.7	−69.9
Interbank transactions	593.3	18.2	611.5	−829.9	91.9	−126.5

Source: Bank of Mexico, *Annual Report* (Mexico, D. F.).
[1] No sign indicates expansion; minus sign indicates contraction.

NETHERLANDS

Both the Netherlands Bank and the Netherlands Central Planning Bureau publish financial analyses. Taken together, the statements provide data on changes in money, the community's liquidity, and net borrowing and lending, by sectors. The data on borrowing and lending are integrated with the national income accounts.

Three tables published by the Netherlands Bank are designed to analyze changes in both money and the community's liquidity. The table, Causes of Changes in the Domestic Money Supply, shown here as Table 54, is a consolidated statement of changes in the assets and liabilities of the monetary system (the Netherlands Bank, commercial banks, commercial banking departments of agricultural credit banks, postal checking office, the Amsterdam giro office, and the currency issue department of the Government, but not savings banks). The assets of the system are classified as obligations of the following sectors: (A) public authorities (with the Central Government and local authorities as subsectors), (B) the private sector, and (D) foreigners. In addition, there is a group of entries brought together as adjustments to the general data of the table and grouped under (C) miscellane-

ous causes. These causes comprise securities purchased by the money-creating institutions from the market, entered as one group rather than allocated by the sectors thereby obligated to the monetary system, changes in quasi-monetary liabilities of the system, and movements in other liabilities of the monetary system. Government deposits and foreign liabilities are treated as deductions from

TABLE 54. NETHERLANDS: CAUSES OF CHANGES IN THE DOMESTIC MONEY SUPPLY, 1951–55

(In millions of guilders)

	1951	1952	1953	1954	1955[1]
A. Creation of money for account of public authorities					
1. Creation of money for account of Government					
a. Increase in net debt of Government to money-creating institutions	189	−1,592	−955	−329	−114
b. Transfers from the local currency account to Treasury's ordinary account	203	828	221	428	158
c. Sale of Netherlands Treasury paper to foreign central banks for employment of balances arising from payments agreements	98	−29	−86	−6	17
Total	490	−793	−820	93	61
2. Loans to local authorities	206	−281	114	71	128
3. Total	696	−1,074	−706	164	189
B. Creation of money for account of private sector of economy					
1. Loans to business and private customers					
a. By commercial banks	210	69	263	372	356
b. By agricultural credit institutions	25	15	8	56	43
c. By other money-creating institutions	—	6	2	12	28
2. Total	235	90	273	440	427
C. Miscellaneous causes					
1. Security transactions of money-creating institutions					
a. Net purchase of securities	21	25	52	93	167
b. Issues (−) of shares and bonds			−2	−8	−48
2. Time deposits at commercial banks (increase −)	−326	−173	5	−244	−190
3. Foreign currency balances of Netherlands residents at commercial banks (increase −)	−77	27	8	43	7
4. Capital and reserves of money-creating institutions (increase −) and sundry items	−107	128	−119	−126	13
5. Total	−489	7	−56	−242	−51
D. Net purchase of foreign exchange by money-creating institutions from private sector of economy and public authorities					
1. Increase in Netherlands Bank's gold and net claims on foreign countries[2]	144	2,063	844	153	34
2. Increase in other money-creating institutions' net claims on foreign countries	107	−74	251	95	157
3. Amounts credited (−) to the local currency account	−511	−264	−81	−51	5
4. Total	−260	1,725	1,014	197	196
Changes in domestic money supply	**182**	**748**	**525**	**559**	**761**
In notes and coin[3]	75	136	221	289	373
In balances at banks	107	612	241	107	196
In balances at giro transfer institutions			63	163	192

Source: Netherlands Bank, *Report for the Year* (Amsterdam).

[1] Provisional.

[2] Including claims on Brazil, Poland, and Yugoslavia consolidated in August 1955.

[3] Including notes and coin held by nonresidents.

claims on the Government and foreign assets, respectively. Since the entry for the net increase in the gold and foreign exchange holdings of the Netherlands Bank includes, among its liability components, the liabilities under payments agreements held in the form of treasury bills instead of as deposits with the Bank, there

TABLE 55. NETHERLANDS: PRIMARY AND SECONDARY LIQUID RESOURCES IN THE HANDS OF DOMESTIC HOLDERS OTHER THAN BANKS[1]

(In millions of guilders)

Distribution of Liquid Resources According to Their Nature and the Holders	Totals as at December 31				
	1951	1952	1953	1954	1955[2]
Total primary liquid resources	7,120	7,750	8,270	8,830	9,590
Held by					
Private individuals, trade, and industry[3]	6,820	7,330	7,890	8,510	9,270
Institutional investors (excluding savings banks) and miscellaneous funds[4]	140	190	210	150	170
Savings banks[5]	40	50	50	40	40
Provinces and municipalities	120	180	120	130	110
Total secondary liquid resources[6]	2,940	3,380	3,330	3,550	3,680
Consisting of					
Claims on the Government[7]	1,210	1,680	1,740	1,640	1,530
Claims on provinces and municipalities[8]	570	270	180	300	360
Claims on money-creating institutions[9]	1,160	1,430	1,410	1,610	1,790
Held by					
Private individuals, trade, and industry	2,020	2,060	1,970	2,070	2,260
Institutional investors (excluding savings banks) and miscellaneous funds[4]	450	440	540	510	540
Savings banks[5]	420	540	650	780	720
Provinces and municipalities	50	340	170	190	160
Total primary and secondary liquid resources	10,060	11,130	11,600	12,380	13,270
Held by					
Private individuals, trade, and industry	8,840	9,390	9,860	10,580	11,530
Institutional investors (excluding savings banks) and miscellaneous funds[4]	590	630	750	660	710
Savings banks[5]	460	590	700	820	760
Provinces and municipalities	170	520	290	320	270
Not included as such in the statement above:					
Savings balances at savings banks and agricultural credit banks[10]	3,980	4,250	4,640	5,140	5,830

Source: Netherlands Bank, *Report for the Year* (Amsterdam).

[1] The figures have been calculated by the Netherlands Bank; they are based partly on estimates.

[2] Provisional.

[3] This category, for which the figures have been calculated as a residual amount, also includes the funds which could not be included in the special category of institutional investors (excluding savings banks) and miscellaneous funds.

[4] This category includes, inter alia, pension funds, life assurance companies, social insurance funds, the mutual war damage insurance associations, and the National Disaster Fund.

[5] Including the savings departments of the agricultural credit banks.

[6] Secondary liquid resources are taken here to include all claims on the public authorities and money-creating institutions—held by holders other than money-creating institutions—which can be converted in large amounts into money at relatively short notice, without much expense or much loss on the transaction, or which can be used at their face value to make payments in satisfaction of current tax assessments.

[7] Treasury bills, treasury bonds, tax certificates, reconstruction bonds, and freely available balances at the Treasury (all with an original maturity of less than five years).

[8] Cash advances, day-to-day loans, and credits in current accounts granted to provinces and municipalities; also, short-term claims of various descriptions on the Bank for Netherlands Municipalities.

[9] Time deposits, savings deposits, and balances on foreign currency accounts at banks; also, the 12-month deposits at the Giro Transfer Office of the City of Amsterdam.

[10] Including current interest.

is an entry (A.1.c) that records purchases of these bills as if they had been acquired by the Netherlands Bank, providing central bank finance to the Government. Finance given to the economy as a result of the U.S. aid program is treated, when the donations are made, as equivalent to the reduction in foreign assets that would have taken place in its absence and, when transfers are made from the counterpart account to the treasury accounts, as an addition to financing received by the Treasury through the operation of the monetary system.

In the two other tables, presented here as Tables 55 and 56, the Bank analyzes the changes in "primary and secondary liquid resources." In the first of these tables (Table 55), the totals of primary and secondary liquid resources are measured by holder and origin. Primary liquid resources are the same as the domestic money supply. Secondary liquid resources are time, savings, foreign currency, and similar deposits with the money-creating institutions, obligations of the Government with an original maturity not exceeding five years, and short-term loans to local governments. Since savings banks are not classified as money-creating institutions, but are incorporated in the private sector, not all of the items that might be considered as "quasi money" are included in secondary liquidities. In the second of these tables (Table 56), the net liquidity deficit or surplus of each sector is computed as the sum (with appropriate sign) of its net borrowing from the banking system, its net issuance of secondary liquidities, and the net reduction in its holdings of money and secondary liquidities.

The net borrowing from the banking system, as measured by the Netherlands Bank, must be equal to the net increase in money and nonmonetary deposits with the system. Any increase in a sector's outstanding debts that are considered to be secondary liquidities must be matched by an equal increase in the secondary liquid holdings of other sectors. Hence the sum of all liquidity deficits and surpluses must equal zero, or, in other words, the sum of the domestic liquidity deficits and surpluses must equal the liquidity surplus or deficit of foreign countries with the Netherlands. The liquidity deficit (or surplus) of any sector is considered by the Bank to provide the starting point for the analysis of the role played by that sector in the inflationary (or deflationary) process.

Whereas the Netherlands Bank analyzes liquidity deficits and surpluses, the Central Planning Bureau attempts to analyze, in a "monetary survey," all financial transactions. Data for 1955 are given below in Table 57. The survey is consistent with the national income compilations. All income receipts from Netherlands sources are recorded for the significant economic sectors (foreigners, government, and the private sector). The government accounts are subsectored into central government and local government. For the private sector, transactions are separated into those related to transfers to and from insurance funds, wage and salary payments and receipts, and other income transfers. For each sector, and subaccount, total disposable income is recorded (item 4). Expenditure by the Netherlands economy, whether for consumption, for the purchase of fixed assets, or for increases in stocks, plus the adjustments required to reconcile the financing accounts with the income accounts, are deducted from the disposable income of each sector to measure the "finance surplus" of each sector (item 11). The adjustments are of two kinds. The first, "net credits" (item 10.a), represents the transfers from the Central Government to the local authorities, and to the government and other enterprises that are included in the private sector, for the financing of investments. In this way, government financing of the activities of local governments and enterprises is transferred from the local government, or private sector, to the central government sector as required for the financing analysis. The second, "capital transfers" (item 10.b) records intersector capital transfers that involve no debt creation. These include government grants to the private sector, to the local authorities, and to Surinam and New Guinea, and government receipts, mainly from the U.S. aid program. Imports (item 2) are regarded as a "receipt" (since they represent a receipt by the foreign sector from the other "Netherlands" sectors) and exports (item 6) are recorded as an "expenditure." A subtotal (item

Table 56. Netherlands: Ascertainable Liquidity Deficits and Surpluses, 1951–55

(In millions of guilders)

	1951	1952	1953	1954	1955
I. Central Government					
A. Creation of liquid resources					
1. Direct recourse (−) to money-creating institutions	−490	790	820	−90	−60
2. Placing (−) of floating debt having the character of secondary liquid resources	620	−480	−60	100	110
B. Increase (−) in debt toward local authorities	60	60	−60	50	130
Liquidity deficit (−)	190	370	700	60	180
II. Local Authorities					
A. Creation of liquid resources					
1. Direct recourse (−) to money-creating institutions	−210	280	−110	−70	−130
2. Placing (−) of floating debt having the character of secondary liquid resources	−170	310	90	−120	−60
B. Drawing down of liquid resources					
1. Drawing down (−) of primary liquid resources	30	60	−60	10	−20
2. Drawing down (−) of secondary liquid resources	20	280	−170	20	−30
C. Increase (−) in debt toward the Government	−60	−60	60	−50	−130
Liquidity deficit (−)	−390	870	−190	−210	−370
III. Institutional Investors and Miscellaneous Funds					
A. Creation of liquid resources					
1. Direct recourse (−) to money-creating institutions	—	−70	−90	40	40
B. Drawing down of liquid resources					
1. Drawing down (−) of primary liquid resources	10	60	20	−70	20
2. Drawing down (−) of secondary liquid resources	−130	110	210	100	−30
Liquidity deficit (−)	−120	100	140	70	30
IV. Capital Market (and Sundry Items)					
Creation of liquid resources					
1. Net buying (−) of securities by money-creating institutions	—	—	−50	−90	−120
2. Increase (+) in capital and reserves of money-creating institutions, and sundry items	—	—	120	130	−10
Total	—	—	70	40	−130
V. Private Individuals, Trade, and Industry (Residual Item)					
A. Creation of liquid resources					
1. Direct recourse (−) to money-creating institutions	−140	−180	−180	−480	−460
B. Drawing down of liquid resources					
1. Ascertainable use (−) of primary liquid resources	140	630	560	620	760
2. Drawing down (−) of secondary liquid resources	60	−70	−90	100	190
Liquidity deficit (−)	60	380	290	240	490
Total of liquidity deficits (−) in the five sectors = national liquidity deficit (−)	**−260**	**1,720**	**1,010**	**200**	**200**
VI. Foreign Countries					
Recourse (−) to Netherlands money-creating institutions for the purpose of financing					
a. Capital transactions with Netherlands public authorities	320	330	420	520	310
(Including net receipts in respect of redemptions before due date)	(−)	(−)	(80)	(400)	(190)
b. Capital transactions with the Netherlands private sector	−310	−190	−150	−230	−260
c. Current transactions	250	−1,860	−1,280	−490	−250
Liquidity deficit (−) of foreign countries	**260**	**−1,720**	**−1,010**	**−200**	**−200**

Source: Netherlands Bank, *Report for the Year* (Amsterdam).

(In billions of guilders)

	Foreign (1)	Central Government (2)	Local Authorities (3)	Insurance Funds (4)	Wages and Salaries (5)	Other Income (6)	Total Government (2) + (3) (7)	Total Private Sector (4) + (5) + (6) (8)	Total Home Economy (7) + (8) (9)
1. Primary income		2.95	0.01	X	12.59	10.48	2.96	23.07	26.03
2. Imports of goods and services	14.51								
3. Net income transfers received or granted (−)									
a. Direct taxes accrued in 1955		3.43	—	X	−0.96	−2.47	3.43	−3.43	X
b. Income transfers from Central Government to local authorities		−1.38	1.38	X	X	X	X	X	X
c. Income transfers from Government to private sector		−0.84	−0.27	0.29	0.82	X	−1.11	1.11	X
d. Net payment of interest by Government on internal debt		−0.32	−0.16	0.24	X	0.24	−0.48	0.48	X
e. Payments by Insurance Funds		X	X	−0.76	0.76	X	X	X	X
f. Interest and premiums paid to Insurance Funds		X	X	1.51	−1.29	−0.22	X	X	X
g. Net receipts of interest and profits by Government		0.05	0.15	X	X	−0.20	0.20	−0.20	X
4. Total disposable income (1 plus 3)		3.89	1.11	1.28	11.92	7.83	5.00	21.03	26.03
5. Consumption									
a. Wages and salaries (Government only)		1.64	0.49				2.13		2.13
b. Expenditure on goods and services		1.62	0.52	X	11.54	5.23	2.14	16.77	18.91
6. Exports of goods and services	15.14								
7. Savings or dissavings (−) (4 minus 5)		0.63	0.10	1.28	0.38	2.60	0.73	4.26	4.99
8. Net investment or net disinvestment (−)									
a. Fixed assets		0.13	0.34	X	X	3.39	0.47	3.39	3.86
b. Change in commodity stocks (inclusive of work in progress)		X	X	X	X	0.50	X	0.50	0.50
9. INCOME SURPLUS (2 MINUS 6 OR 7 MINUS 8)	−0.63	0.50	−0.24	1.28	0.38	−1.29	0.26	0.37	0.63
10. Indirect expenditure									
a. Net credits supplied or received (−)	—	−0.29	0.89	X	X	−0.60	0.60	−0.60	X
b. Capital transfers supplied or received (−)	−0.03	1.15	−0.04	X	X	−1.08	1.11	−1.08	0.03
11. FINANCE SURPLUS (9 MINUS 10)	−0.60	−0.36	−1.09	1.28	0.38	0.39	−1.45	2.05	0.60
12. Net increase or net decrease (−) of long-term claims on									
a. Foreign countries	0.09	−0.25	X				−0.25	0.16	−0.09
b. Other domestic sectors	X	0.66	0.71				1.37	−1.37	X
13. Difference between taxes paid and taxes accrued in 1955	X	−0.03	X				−0.03	0.03	X
14. Redemption of national debt in connection with tax payments	X	−0.03	X				−0.03	0.03	X
15. Crediting of the local currency account[2]	X	0.01	X				0.01	X	0.01
16. Payments by Custodian of Enemy Property	X	0.08	X				0.08	−0.08	X
17. Net increase or net decrease (−) of short-term claims on other sectors, and miscellaneous items	0.36	0.15	0.01				0.16	−0.52	−0.36
18. LIQUIDITY SURPLUS (11 MINUS 12 THROUGH 17)	−0.15	0.23	−0.37				−0.14	0.30	0.16
The liquidity surplus finds expression in									
19. Increase or decrease (−) of the quantity of money		X	−0.02				−0.02	0.86	0.84
20. Increase or decrease (−) of secondary liquid assets		X	−0.04				−0.04	−0.08	−0.12
21. Decrease or increase (−) of debts									
a. Short-term debts to domestic sectors (excluding banks)		0.39	−0.15				0.24	X	0.24
b. Short-term and long-term debts to banks	−0.15	−0.16	−0.16				−0.32	−0.48	−0.80

Source: Central Planning Bureau, *Central Economic Plan* (The Hague).

[1] Explanation of signs used: blank, left out of consideration; dash (—), nil in year under review; X, impossible on account of definition used or of institutional factors. [2] Of which transferred to the Exchequer, 0.16 billion guilders.

7) records the difference between disposable incomes and expenditures for consumption, i.e., the traditional measure of savings.

The borrowing and lending associated with the finance surplus are analyzed insofar as possible by type of transaction. The accumulation of money by a sector is regarded as lending through the intermediary of the banking system, and increases in the claims of banks on each sector are similarly regarded as borrowing from the sector. The figures on long-term borrowing and lending (including in borrowing the transfers on foreign aid account and changes in short-term financial claims and miscellaneous items other than those considered to be "secondary liquidities") are deducted from the finance surplus to measure the "liquidity surplus" for each sector (item 18). The "short-term claims" (item 17) are a residual item rather than a direct estimate. They are derived as the estimated finance surplus, minus the identifiable nonliquidity financial transfers, and minus the directly calculated liquidity surplus. The large size of this residual indicates the possible magnitude of the discrepancy in this table (360 million guilders in 1955, compared with an estimated finance surplus of 600 million guilders). The Central Planning Bureau regards none of its totals as unequivocal measures of inflationary or deflationary pressures. However, it views the finance surplus as a measure of the "disequilibrium" in each sector's income and expenditure accounts and hence related to the pressures exerted on the economy by the sector. The liquidity surplus, however, is likely to be more directly influenced by the inflationary or deflationary pulls from outside the sector.

NEW ZEALAND

The Reserve Bank of New Zealand publishes a table, shown here as Table 58, analyzing the causes of changes in the volume of money, including government deposits, for years ending in January. In its statement to the Royal Commission on Monetary, Credit, and Banking Systems in 1955, the Reserve Bank included a table, given below as Table 59, analyzing the causes of changes in money.

TABLE 58. NEW ZEALAND: CAUSES OF CHANGES IN THE VOLUME OF MONEY IN CIRCULATION, 1952–56

(In millions of New Zealand pounds)

	Last Balance Day in January				
	1952	1953	1954	1955	1956
Overseas transactions[1]	−12.5	1.5	27.4	−20.7	−19.4
Bank credit					
Reserve Bank					
Advances and discounts	−8.2	5.6	−2.8	18.3	—
Investments in New Zealand	−12.0	14.0	−2.8	−22.9	8.1
Trading banks					
Advances and discounts	46.6	−24.0	0.5	31.7	3.1
Investments in New Zealand	−0.2	−0.3	7.5	5.6	−2.1
Shift from time to demand liabilities at trading banks[2]	0.4	2.3	2.3	−3.0	7.3
Shift in wool retention accounts[3]	−20.1	6.2	5.7	5.8	6.3
Other items	3.7	−6.3	2.9	0.8	−2.1
CHANGES IN VOLUME OF MONEY IN CIRCULATION	−2.3	−0.9	40.7	15.6	1.2

Source: Reserve Bank of New Zealand, *Bulletin* (Wellington).

[1] As shown by changes in foreign exchange and overseas investments held by the New Zealand banking system in respect of New Zealand business, less overseas liabilities. No sign indicates that overseas exchange receipts exceeded disbursements, and minus sign indicates an excess of disbursements.

[2] Minus sign indicates shift from demand to time liabilities. Excludes movements of wool retention balances.

[3] Minus sign indicates movement into wool retention accounts; no sign indicates withdrawals.

TABLE 59. NEW ZEALAND: CAUSES OF CHANGES IN THE VOLUME OF MONEY, 1951–55

(In millions of New Zealand pounds)

	Last Balance Day in June				
	1951	1952	1953	1954	1955
CHANGES IN VOLUME OF MONEY	40.4	−19.3	25.3	29.0	4.6
Overseas transactions	36.3	−48.7	43.0	21.6	−35.5
Government borrowing from banks	−19.0	−6.0	15.7	−23.3	−7.5
Trading bank advances and discounts	41.2	40.3	−44.8	21.2	34.8
Other advances	−0.2	0.2	7.1	−0.3	10.0
Shift from time to demand liabilities	0.7	0.9	3.1	1.3	−0.8
Shift in wool retention accounts	−20.9	−7.8	6.3	5.7	5.8
Other items	2.3	1.8	−5.2	2.8	−2.2

Source *Monetary and Fiscal Policy in New Zealand: Submissions to the Royal Commission on Monetary, Banking, and Credit Systems, 1955* (Wellington, 1955), p. 35.

In Table 58, the accounts relating to the Reserve Bank and business within New Zealand of the trading banks, but not of the savings banks, are analyzed. Changes in the assets of the monetary system are recorded under two headings, overseas transactions and bank credit. Overseas transactions are measured by changes in the foreign assets minus foreign liabilities of the banking system. A number of the trading banks operating in New Zealand are branches of overseas banks; hence the foreign liabilities of the trading banks are significant. Under "bank credit," the major domestic assets of the banking system are separated into those of the Reserve Bank and those of the trading banks. Each of these groups of items is classified as advances and discounts, or investments. For the Reserve Bank, all the investments and a large part of the advances and discounts represent claims on the Government. For the trading banks, all advances and discounts are to the private sector (including government marketing organizations in the private sector), and a large portion of the investments are in government securities. The item, shift from time to demand liabilities, measures the decline in time liabilities, i.e., time deposits with the trading banks. A decline in time deposits is considered to be a factor leading to an increase in money. Similarly, the item, shift in wool retention accounts, measures the decreases in the accounts that wool exporters were required to hold as an anti-inflationary measure at the time when wool prices were high.

The table that was prepared for the Royal Commission is similar to the other table, except that changes in the claims of the consolidated banking system on the Government are recorded as a separate entry. Hence it is possible to derive data on the changes in the banking system's claims on the foreign, government, and private sectors.

NICARAGUA

The National Bank of Nicaragua publishes a table, shown here as Table 60, providing an external-internal origin analysis of money, including the holdings of the Government and official entities, and also allocating the responsibility for its creation between the central bank (the Issue Department of the National Bank) and the commercial banks (including the Banking Department of the National Bank). The factors of external origin are defined as the net foreign assets of the central bank and the commercial banks. For the central bank, foreign assets prior to 1955 include the foreign exchange holdings at par values (including the gross

TABLE 60. NICARAGUA: ORIGINS OF MONEY IN CIRCULATION, 1951–55

(*In millions of córdobas*)

	1951	1952	1953	1954	1955
Money in circulation	**164.4**	**197.9**	**267.8**	**289.3**	**294.6**
External origin	55.4	81.6	82.3	55.8	93.4
Net foreign assets					
Issue Department of National Bank	51.2	85.7	85.3	68.0	99.1
Commercial banks	4.2	−4.1	−3.0	−12.3	−5.7
Internal origin	109.0	116.3	185.5	233.5	201.2
Issue Department of National Bank	53.8	37.8	69.0	93.9	60.1
Loans and investments					
To Government and Mortgage Bank	*36.9*	*28.1*	*20.0*	*11.1*	*3.2*
To commercial banks	*72.1*	*76.0*	*105.2*	*170.4*	*197.7*
Other assets	—	—	—	*0.1*	*0.1*
Less Nonmonetary liabilities	*55.2*	*65.3*	*56.2*	*87.7*	*140.9*
Commercial banks	54.6	78.4	116.2	138.1	140.5
Loans and investments					
To private sector	*141.9*	*173.5*	*253.3*	*361.2*	*403.5*
To official entities and Government	*2.6*	*2.5*	*5.0*	*4.5*	*3.5*
Other assets	*10.5*	*11.9*	*14.0*	*19.9*	*23.9*
Less Nonmonetary liabilities	*100.4*	*109.5*	*156.1*	*247.5*	*289.4*
Interbank discrepancies	0.6	0.1	0.3	1.5	0.6

Source: Banco Nacional de Nicaragua, *Revista Trimestral* (Managua).

IMF position), plus the profit on exchange arising from discrepancies between the par and transactions rates of exchange, minus foreign liabilities (including deposits of the IMF and IBRD, etc., and of foreigners). After the change in the par value of the córdoba on July 1, 1955 and the abolition of the multiple rate system, they are valued at par values. The difference between these two measures of value (30 million córdobas) involves a rise in the measure of money of external origin and a fall in the measure of money of internal origin. Aside from this discontinuity, changes in foreign assets indicate the creation of córdobas by the central bank resulting from foreign operations. For the commercial banks, the foreign assets are the gross foreign assets valued at net cost (i.e., at actual rates of exchange), minus foreign borrowings by these banks, and minus the net balance due by the Bank of London and South America to its home office. The factors of internal origin are first divided into those arising in the central bank and those arising in the commercial banks; then, for each of these groups, the asset accounts are subdivided, insofar as possible, into claims on the Government (including the Mortgage Bank as part of the Government), on the private sector, and on government agencies. The loans of the central bank to the commercial banks are included as an item of central bank responsibility, and there is an offsetting entry in the nonmonetary liabilities of the commercial banks. The nonmonetary liabilities that are deducted from the assets of the banks, to arrive at an estimate of the net factors of internal origin, include, for the central bank, the frozen accounts of the private sector and of the Government under the advance payments scheme for imports, deposits in foreign exchange held by residents, and capital accounts (including the surplus arising from the 1955 revaluation of foreign assets). For the commercial banks, the capital and reserves of the banks and other miscellaneous liabilities are included.

NORWAY

The Bank of Norway, the Ministry of Finance, and the Central Bureau of Statistics, all publish tables analyzing changes in the liquidity of the Norwegian

TABLE 61. NORWAY: CHANGES IN THE LIQUIDITY OF THE BANKS AND THE PRIVATE SECTOR, 1955

(In millions of Norwegian kroner)

	1955
A. Government	
Cash surplus (−) or deficit on current budget, business enterprises and plants, different special accounts, etc.	−212
Redemption of domestic loans and purchase of bonds	208
Loans to State Banks	735
Domestic loans raised by Government	−750
Total	−19
B. Bank of Norway	
Net sales of foreign exchange	−155
Transfers from banks of blocked taxation funds	−31
Net increase in securities, excluding treasury bills	57
Advances and discounts	65
Total	−64
C. Total (A + B)	−83
Changes in note circulation	−16
Changes in bank accounts with Bank of Norway	83
Changes in holdings of treasury bills in hands of banks and private sector	−73
Other	−77

Source: Bank of Norway, *Report and Accounts for the Year 1955* (Oslo, 1956).

TABLE 62. NORWAY: INCREASES AND DECREASES IN LIQUIDITY, 1951–55

(In millions of Norwegian kroner)

	1951	1952	1953	1954	1955
Government					
Cash surplus (−) or deficit	−263	−157	205	371	−9
Loans to State Banks	481	312	526	570	735
Cash deficit prior to borrowing	218	155	731	941	726
Domestic borrowing	−31	−101	−1	−531	−750
Net liquidity increase or decrease (−) by Government	187	54	730	410	−24
Bank of Norway					
Net purchase or sale (−) of exchange	−222	125	−612	−493	−151
Transfer of blocked funds	515	—	—	—	−30
Other transactions	−4	−9	3	−17	122
Net liquidity increase or decrease (−) by Bank of Norway	289	116	−609	−510	−59
Banks and private sector					
Total net liquidity changes (decrease −)	476	170	121	−100	−83
Changes in banks' holdings of liquid assets	354	−11	−14	−252	−70
Changes in banknotes in private hands	222	259	209	185	—
Other changes	−100	−78	−74	−33	−13

Source: *The National Budget of Norway* (Oslo, Ministry of Finance, Storting Report No. 1).

economy. However, the three statements are similar in approach. They regard the issue of treasury bills by the Government and the increase in monetary liabilities of the Bank of Norway as comparable increases in liquidity that may be absorbed by the private sector or may flow to the banks as increases in their cash reserves or as liquid reserves that are convertible into cash.

The table published by the Bank of Norway, shown here as Table 61, analyzes changes during 1955 in liquidity of the banks and the rest of the community that may be attributed to the operations of the Government and the Bank of Norway. Hence it is essentially an analysis of reserve money. The Government's cash deficit (including loans to the State Banks as expenditure), together with expenditure for the redemption of debt, provides a measure of the amount that the Govern-

TABLE 63. NORWAY: SURVEY OF FACTORS LEADING TO, AND CHANGES IN, LIQUIDITY HOLDINGS OF THE PRIVATE SECTOR, FIRST NINE MONTHS, 1954 AND 1955[1]

(In millions of Norwegian kroner)

	First Nine Months	
	1954	1955
1. Government		
Loans to State Banks	251	393
Domestic borrowing[2]	−400	−680
Foreign borrowing	−248	−352
Other transactions	299	162
Total liquidity supplied	−98	−477
2. Bank of Norway		
Foreign assets	−1	181
Loans and advances	−24	21
Bonds	−8	42
Other transactions	−14	20
Total liquidity supplied	−47	264
3. Total liquidity supplied by Government and Bank of Norway (1 + 2)	−145	−213
4. Joint stock and savings banks		
Loans and advances	611	393
Bonds and shares	154	−24
Unused overdrafts	59	−174
Cashier's checks	246	249
Other items	49	−2
Total liquidity supplied	1,119	442
5. Deposits in Post Office checking and savings offices	70	67
6. Total liquidity supplied by all deposit-money banks (4 + 5)	1,189	509
7. Total liquidity supplied by Government and monetary system (3 + 6)	1,044	296
8. Liquidity holdings of private sector		
Currency	−8	−116
Deposits with Bank of Norway	−36	91
Deposits with Post Office	68	68
Treasury bills	−9	42
Deposits with joint stock and savings banks	970	385
Unused overdrafts	59	−174
	1,044	296

Source: Statistisk Sentralbyrå, *Økonomisk Utsyn over Året 1955* (Oslo, 1956), pp. 116, 118, and 119.
[1] Including State Banks, loan associations, and insurance companies.
[2] Excluding treasury bills issued.

ment was required to borrow during the year. The Government's borrowing by means other than treasury bills is deducted to provide a measure of the changes in liquidity made available to the economy as a result of the Government's income, expenditure, and long-term borrowing. The net purchase of foreign exchange and loans granted by the Bank of Norway, plus a few minor items in the Bank's accounts, provide a measure of the changes in liquidity attributed to the Bank.

The data in the national budget table, compiled by the Ministry of Finance (see Table 62), differ slightly from those in the table prepared by the Bank of Norway. The total liquidity creations attributed to the Government and the Bank of Norway are classified by holders rather than by type of liquidity created. Redemption of debt is treated as a part of government expenditure, and hence of the Government's deficit, rather than as a separate outlay requiring financing. Finally, the magnitudes for the same data differ because the budget is prepared before final estimates for all the items are available. The data are limited to the transactions by the Government and the Bank of Norway. Consequently, they provide an analysis of changes in reserve money rather than in the liquidity of the economy.

The Economic Survey for 1956, prepared by the Central Bureau of Statistics, contains three tables, combined here in one (Table 63), to provide an analysis of the liquidity created by the Government, the Bank of Norway, the joint stock and savings banks, and the Post Office deposit system. This analysis consolidates the accounts of more institutions than are comprehended in the statements of the Bank of Norway and the Ministry of Finance. Consequently, it provides an analysis of changes in the liquidity of the private sector of the economy. These liquid holdings are defined as currency, bank deposits (including savings deposits), treasury bills, and unused overdraft credits. As in the preceding tables, the Government's deficit less long-term borrowing is assumed to contribute to the liquidity of the community by providing treasury bills for purchase or by transferring deposits at the Bank of Norway to other parts of the economy. The increase in the assets of the Bank of Norway, less (in effect) the increase in its holdings of treasury bills, and less the increase in some of its minor liabilities, also increases the li-

TABLE 64. NORWAY: CONTRIBUTIONS OF GROUPS OF INSTITUTIONS TO CHANGES IN LIQUIDITY HOLDINGS OF THE PRIVATE SECTOR, FIRST NINE MONTHS, 1954 AND 1955

(In millions of Norwegian kroner)

	First Nine Months	
	1954	1955
Government		
Treasury bills	−42	34
Deposits with Bank of Norway	−56	−511
Bank of Norway		
Treasury bills	93	−2
Deposits	−112	431
Currency	−28	−165
Joint stock and savings banks		
Deposits	970	385
Unused overdrafts	59	−174
Treasury bills	−60	10
Deposits with Bank of Norway	132	171
Currency	20	49
Deposits with Post Office	−2	1
Post Office		
Total deposits	70	67
	1,044	296

Source: Statistisk Sentralbyrå, *Økonomisk Utsyn over Året 1955* (Oslo, 1956), pp. 116 and 118.

quidity of the economy. The net increase in the assets of the deposit-money banks, less (in effect) increases in their holdings of treasury bills and deposits with the Bank of Norway, further increases the liquidity available to the private sector. Overdrafts approved by the deposit-money banks, but not used by their customers, and deposits with the Post Office are included as factors in liquidity. Hence counterparts to both these items are recorded on the asset side of the accounts. Measures of the contributions of each group of institutions to changes in the different forms of liquidity are among the further details provided in the Economic Survey, and are shown here as Table 64. For each group of institutions, changes in the totals of these items (plus, for the joint stock and savings banks, deposits and unused overdrafts) are equal to its net liquidity creation. The totals for each group of items are equal to the total holdings of the private sector, as recorded in Table 63. The discrepancies between the data for comparable entries in the tables prepared by the Central Bureau of Statistics and the tables of the Bank of Norway and the Ministry of Finance reflect the fact that the data of the Central Bureau cover only nine months of each year.

PERU

The Central Reserve Bank of Peru publishes a table, shown here as Table 65, analyzing by origin and responsibility the means of payment outstanding, excluding government deposits. In addition to providing an external-internal origin analysis of money, the table allocates responsibility for the creation of money to the issuing institutions. For the Government, foreign currency deposits with the Central Bank are considered as measuring that part of its monetary liabilities (i.e., coin in circulation) of external origin. The difference between the total treasury currency issued and all deposits of the Government with the Central Bank (in both foreign and national currency) is considered a measure of the money of internal origin created by the Government. For the Central Bank, the factors of external origin are defined as equal to its net foreign assets, i.e., its gross foreign holdings (including the net IMF position) minus deposits payable in foreign exchange and other liabilities to residents that will be discharged in foreign exchange (e.g., advance payments by Peruvians for the purchase of foreign exchange). The difference between the monetary liabilities of the Bank (i.e., currency outstanding and national currency monetary deposits, including government deposits, and reserve deposits of banks) and its net foreign assets comprises the money of internal origin created by the Central Bank. For the commercial and savings banks, the factors of external origin are foreign exchange holdings less the foreign exchange deposits of Peruvian residents with these banks. The dif-

TABLE 65. PERU: ORIGINS OF THE MEANS OF PAYMENT, 1951–55

(In millions of soles)

	1951	1952	1953	1954	1955
TOTAL MEANS OF PAYMENT	2,742	3,206	3,542	3,774	4,009
External origin	595	579	447	630	501
Government	*2*	*2*	*2*	*1*	*1*
Central Bank	*599*	*625*	*517*	*710*	*631*
Commercial and savings banks	*−6*	*−48*	*−72*	*−81*	*−131*
Internal origin	2,147	2,628	3,095	3,144	3,508
Government	*34*	*39*	*40*	*44*	*32*
Central Bank	*915*	*1,185*	*1,508*	*1,502*	*1,725*
Commercial and savings banks	*1,198*	*1,464*	*1,547*	*1,598*	*1,751*

Source: Banco Central de Reserva del Peru, *Memoria* (Lima).

ference between the banks' monetary deposits and the sum of their net foreign assets plus deposits with the Central Bank comprises the money of internal origin created by the commercial and savings banks.

PHILIPPINES

The Central Bank of the Philippines publishes a table, given here as Table 66, analyzing the origins of changes in money, excluding government holdings but including unused overdraft credits. By its division of the monetary system's assets into domestic and foreign elements, this table might be considered as one showing the "external-internal" origin of money. But since the "nonmonetary" liabilities of the system are shown as an identifiable separate element, the table does not involve the netting of quasi-monetary liabilities against domestic assets that is involved in most of the external-internal origin tables.

Three factors are assumed to lead to changes in money: (1) changes in the international reserve of the economy, which consists of the gross foreign holdings of the Central Bank of the Philippines (the Central Bank does not have foreign liabilities) and the net foreign assets of the other banks; (2) the domestic credits by the monetary system to the economy, which are not specified as to the sectors obligated to the banks and which include overdrafts agreed by the banks but unused by their recipients; and (3) changes in nonmoney-supply deposits, which represent government balances, savings deposits, time deposits, advance deposits by importers prior to the purchase of foreign exchange, and deposits of residents denominated in foreign currencies. These three factors, plus the net balance on miscellaneous accounts recorded in the table and plus an unrecorded adjustment item arising from discrepancies in interbank accounts, are equal to the money supply.

TABLE 66. PHILIPPINES: MONEY SUPPLY AND ITS ORIGINS, 1951–55[1]

(In millions of Philippine pesos)

	1951	1952	1953	1954	1955
MONEY SUPPLY	1,160	1,198	1,224	1,221	1,336
International reserve	608	612	592	545	418
Domestic credits	1,114	1,142	1,239	1,341	1,753
Nonmoney supply deposits	−591	−540	−572	−619	−807
Miscellaneous accounts (net balance)	35	−13	−34	−46	−29

Sources: Central Bank of the Philippines, *Annual Report* and *Central Bank Economic Indicators* (Manila).

[1] Any discrepancy is due primarily to recording lag in interbank transactions.

SWEDEN

The Sveriges Riksbank publishes the table that is given here as Table 67, analyzing the effect of the Bank's transactions on the money supply. "Money" is defined as the Riksbank's notes in circulation plus the deposits on current account with the Bank. Hence this table is an analysis of changes in reserve money. The table summarizes the changes in the following accounts of the Riksbank only: net foreign assets; deposits of the Government and government agencies; holdings of government securities; loans and advances minus long-term deposits (the Riksbank makes loans and advances to the private sector of the economy and holds some deposits of the private sector); and other accounts. These items all add to the "net" assets of the Riksbank, which must equal the liabilities of the

TABLE 67. SWEDEN: RIKSBANK'S TRANSACTIONS AND THE DEVELOPMENT OF THE MONEY SUPPLY, 1951–55

(*In millions of Swedish kronor*)

	1951	1952	1953	1954	1955
Notes in circulation	577	487	259	251	232
Deposits on current account in Riksbank of commercial banks and others	191	37	−398	−30	274
Total	**768**	**524**	**−139**	**221**	**506**
Net result of Riksbank's transactions in gold and foreign exchange	1,284	−71	335	−141	−7
Net changes in state institutions' deposits on current account in Riksbank (excluding clearing balances)	7	29	92	88	−57
Net result of Riksbank's purchases and sales of Swedish Treasury bills and bonds	−622	419	−455	481	756
Loans and advances, long-term deposits deducted	142	203	10	−151	−187
Other transactions with the market	−43	−56	−121	−56	1
Total	**768**	**524**	**−139**	**221**	**506**

Source: Sveriges Riksbank, *Årsbok* (Stockholm).

Bank that are included in the money supply as defined by the Bank (i.e., reserve money held by the banking system and the private sector).

The national income accounts in the Revised National Budget for 1956[1] contain estimates of the savings and investment of the enterprise, household, government, and local authorities sectors. From these estimates it would be possible to derive estimates of net intersector financing. The authors of the budget have not included such compilations, nor does the budget include any data on financial transactions.

UNION OF SOUTH AFRICA

The South African Reserve Bank publishes a table, given below as Table 68, analyzing the changes in the quantity of money in circulation, including govern-

TABLE 68. UNION OF SOUTH AFRICA: CAUSES OF CHANGES IN QUANTITY OF MONEY IN CIRCULATION, 1951–55

(*In millions of South African pounds*)

	1951	1952	1953	1954	1955
CHANGES IN QUANTITY OF MONEY IN CIRCULATION	−8.8	2.1	4.7	27.3	−22.7
Gold and foreign exchange holdings of Reserve Bank	−34.5	−3.7	−26.3	43.2	−16.9
Discounts, loans, advances, and investments					
Reserve Bank	−1.0	16.4	17.8	−18.9	16.7
Commercial banks	34.0	9.7	10.8	26.3	29.2
Fixed and savings deposits at commercial banks[1]	−3.7	−21.3	−1.5	−27.1	−44.1
Other items	−3.6	1.0	3.9	3.8	−7.6

Source: South African Reserve Bank, *Quarterly Bulletin of Statistics* (Pretoria).
[1] No sign indicates a decrease, and minus sign indicates an increase, in fixed and savings deposits.

[1] *Reviderad Nationalbudget för År 1956* (Stockholm, Meddelanden från Konjunkturinstitutet, Serie B: 19, 1956).

ment deposits. This table is a statement of changes in a condensed consolidated balance sheet of the monetary system that incorporates significant netting of liabilities against assets. Changes in the gold and foreign exchange holdings of the Reserve Bank, excluding changes that do not affect the quantity of money—for example, receipts and payments on foreign loans for which liability has been assumed by the Reserve Bank—are considered to be one of the major factors leading to changes in the quantity of money. Changes in the domestic assets of the monetary system, including claims on the Government and claims on the private sector, are segregated into those of the Reserve Bank and those of the commercial banks (excluding the deposits of the commercial banks with the Reserve Bank). Deposits with the National Finance Corporation, which are in some respects similar to deposits with the Reserve Bank, are included in commercial banks' investments. The changes in fixed and savings deposits are deducted to provide the final main cause of the changes in money. The net of these items, together with an adjusting item that includes changes in the foreign assets of the commercial banks, provide a measure that is equal to the changes in money.

UNITED KINGDOM

In the annual official economic reviews published in the United Kingdom, there are three tables that make use of financial data or are designed to provide financial analyses.

TABLE 69. UNITED KINGDOM: FINANCING OF INVESTMENT, 1955

(In millions of pounds sterling)

	Persons	Companies	Public Corporations	Central Government	Local Authorities	Residual Error	Tax and Dividend Reserves, Etc.	Total
Saving before providing for depreciation and stock appreciation[1]	967	1,468	187	441	104	−32	109	3,244
Taxes on capital	−184	—	—	184	—	—	—	—
Capital transfers (net receipts)	57	28	12	−94	15	—	—	18
Provision for stock appreciation	−46	−122	−18	−14	—	—	—	−200
Total funds available from savings and capital transfers for gross investment	**794**	**1,374**	**181**	**517**	**119**	**−32**	**109**	**3,062**
Gross domestic capital formation								
Fixed capital formation	580	985	575	197	528	—	—	2,865
Value of physical increase in stocks and work in progress	54	374	−7	−121	—	—	—	300
Net borrowing from taxation reserves	−20	−83	20	—	—	—	83	—
Net borrowing from dividend and interest reserves	—	−31	5	—	—	—	26	—
Net acquisition of financial assets plus net overseas investment	180	129	−412	441	−409	−32	—	−103
Total gross investment	**794**	**1,374**	**181**	**517**	**119**	**−32**	**109**	**3,062**

Source: Central Statistical Office, *National Income and Expenditure, 1956* (London, 1956), pp. 44–45.
[1]For enterprises operating overseas, this item is after providing for depreciation.

The first of these is the table, "The Financing of Investment," included in the annual statement of *National Income and Expenditure*. The data from this table for the year 1955 are shown here as Table 69. They bring together entries from the other national income accounts, to provide an estimate of the net financing of each of the domestic sectors (i.e., excluding the rest of the world) that are considered significant in the U.K. accounts (these sectors and the allocation of transactions to them differ from the suggestions in the UN classification). The savings of each sector (including depreciation) and intersector transfers on capital account provide a measure of the total funds available for investment by each sector. Since the savings data include, and the investment data exclude, the appreciation in the value of existing inventories, a deduction must be made for this item. The investment by each sector may take the form of acquisition of real or financial assets. The difference between the estimated funds available for invest-

TABLE 70. UNITED KINGDOM: CAPITAL ACCOUNT OF THE PERSONAL SECTOR, 1951–55

(In millions of pounds sterling)

	1951	1952	1953	1954	1955
NET INCREASE IN ASSETS					
Saving before providing for depreciation and stock appreciation	240	710	895	816	967
Additions to tax reserves	67	3	−39	10	20
Capital transfer receipts	67	55	46	37	57
Capital transfer payments	−194	−159	−165	−183	−184
Provision for stock appreciation	−112	−10	−7	−20	−46
Total net increase in assets	68	599	730	660	814
IDENTIFIABLE INCREASES IN ASSETS					
Gross domestic capital formation					
Fixed capital formation					
Dwellings	58	101	170	234	283
Other	214	209	208	241	297
Value of physical increase in stocks and work in progress	70	−15	33	42	54
Total	342	295	411	517	634
Acquisition of financial assets					
Liquidation of debt to building societies					
Repayments	169	160	167	195	217
Advances	−268	−266	−300	−373	−393
Net liquidation of debt	−99	−106	−133	−178	−176
Life assurance, superannuation schemes, etc.					
Contributions of employers	274	308	329	352	379
Contributions of employees, individual premiums, etc.	371	392	416	440	467
Rent, dividends, and interest	154	171	191	211	236
Pensions and other benefits paid	−381	−402	−422	−445	−472
Administrative costs	−99	−105	−110	−115	−122
Net increase in funds	319	364	404	443	488
National Savings					
Net increase in principal invested	−24	−103	−67	63	24
Net increase in interest accrued on National Savings Certificates	25	22	22	23	16
Net increase in amount outstanding	1	−81	−45	86	40
Building societies					
Net increase in shares and deposits	97	119	157	216	191
Increase in net personal bank deposits	−26	60	82	78	74

Source: Central Statistical Office, *National Income and Expenditure, 1956* (London, 1956), p. 27.

ment and the estimated real investment, adjusted for the accrual items, provides a residual entry that records the estimated net acquisition of financial assets by each sector. However, the financing transactions of banks and financial institutions, other than life insurance companies, are consolidated with the transactions of all other companies. Consequently, this table cannot show the community's borrowing and lending transactions with banks and financial institutions separately from other borrowing from the company sector, and the transactions of nonfinancial companies with the banking and financial sectors of the economy cannot be identified. The table includes no column for the foreign sector. Hence the totals for capital transfers and net acquisition of financial assets are equal to capital receipts from abroad (chiefly U.S. aid) and net foreign investment. The life insurance operations of insurance companies and most pension funds are included as part of the personal sector. Hence the net acquisition of financial assets by the personal sector includes the increase in the gross assets of insurance funds less any borrowings by insurance companies from nonpersonal sectors. Consequently these transactions are not consolidated within the company sector. Since the U.K. accounts include in the personal sector income from self-employment and rent receipts by individuals, and since public corporations are a sector separate from other companies, no intersector adjustments are required to reconcile the saving and financing data by sector, other than the inclusion, in the capital transfers, of amounts transferred to public corporations by the Government. The most significant capital transfers between sectors are war damage payments by the Central Government to the personal and company sectors, and Central Government grants for the financing of investment by local authorities.

TABLE 71. UNITED KINGDOM: COMPARISON IN MEASUREMENTS OF NET ACQUISITION OF FINANCIAL ASSETS BY THE PRIVATE SECTOR, 1951–55

(*In millions of pounds sterling*)

	1951	1952	1953	1954	1955
1. Total net increase in assets	68	599	730	660	814
2. Gross domestic capital formation	342	295	411	517	634
3. Apparent net acquisition of financial assets (1 minus 2)	−274	304	319	143	180
4. Identifiable net acquisition of financial assets	292	356	465	645	617
5. Discrepancy (4 minus 3)	566	52	146	502	437

Source: Central Statistical Office, *National Income and Expenditure, 1956* (London, 1956).

The second table that makes use of financial data is also included as one of the national income and expenditure accounts. It is shown here as Table 70. In this table, the total net increase in assets of the personal sector, estimated as a residual from the income and expenditure data, is compared with the changes in assets that may be directly identified from the investment data in the national accounts, and from available financial data. Consequently, the total net increase in assets in the capital account table is consistent with the comparable entries in the financing of investment table. The total identifiable increases in assets are, however, considerably greater, in most years, than the estimated net increases in assets as derived from the national income residual estimates of savings. Consequently, the identifiable net acquisition of financial assets by the personal sector is greater than that computed in the financing table. The discrepancies in the data for the five years ending in 1955 are demonstrated in Table 71. In the description of the methods of compiling the accounts,[1] the U.K. authorities state that the

[1] Central Statistical Office, *National Income Statistics; Sources and Methods* (London, 1956).

TABLE 72. UNITED KINGDOM: COMPANY FINANCE AND INVESTMENT, EXCLUDING BANKING, INSURANCE, AND OTHER FINANCIAL INSTITUTIONS, 1951–55[1]

(In millions of pounds sterling)

	1951	1952	1953	1954	1955
Current account					
Gross trading profits	2,530	2,224	2,376	2,657	2,953
Other income	401	249	335	437	396
U.K. tax payments	−642	−917	−870	−763	−754
Interest payments[2]	−255	−289	−284	−311	−354
Income available for distribution or investment	2,034	1,267	1,557	2,020	2,241
Dividend payments[3]	−530	−526	−573	−638	−745
Undistributed profits after tax	1,504	741	984	1,382	1,496
Items in capital account					
Borrowing by new issues[4]	154	120	101	182	214
Fixed investment at home	610	602	647	740	946
Increase in value of stocks	891	−74	32	303	588
Additions to tax reserves	422	−76	46	71	41

Source: Chancellor of the Exchequer, *Economic Survey, 1956* (London, 1956), p. 21.

[1] The scope of this table varies from year to year as a result of acts of nationalization and denationalization.

[2] Including remittances and taxes paid abroad.

[3] Ordinary and preference dividends before deduction of tax.

[4] Estimates, based on prices of issue and relating to issues by public companies only, including subscriptions to new issues from within the company sector.

data on the identifiable increases in financial assets "are far from complete." The main items that are omitted and that may account for the large excess of identifiable increases in financial assets over the estimated increases are changes in holdings of securities (other than "National Savings" securities, Building Society Shares, and securities held by life funds and superannuation schemes, etc.),[2] transactions in existing fixed assets,[3] holdings of currency,[3] net bank deposits and trade credits or debts of unincorporated businesses,[3] and consumer debt.[4] Part of the discrepancy may be accounted for by any errors in the savings and investment figures included in the financing table. The increase in net personal bank deposits measures the increase in bank deposits held by the personal sector of the economy, less the increase in loans by the banks to the personal sector, but excludes deposits of and loans to unincorporated businesses.

The third table is included in the annual *Economic Survey*, and is shown here as Table 72. It provides measures of the factors giving rise to company savings (i.e., undistributed profits after tax), and data on borrowing through new issues of securities, the purchase of fixed investment, and the increase in the value of inventories held.

[2] These assets may have increased or decreased in individual years and hence may account for part of the discrepancy.

[3] Part of the increase in currency during these years (£350 million) probably accrued to the personal sector; the bank deposits of unincorporated businesses also probably increased and, insofar as their trade credits to the personal sector increased, this would be an intrasector change involving no net acquisition by the sector; therefore the inclusion of these items in the table would have increased the discrepancy.

[4] The amount of consumer debt expanded in this period, but the *Board of Trade Journal* indicates that the total amount of hire-purchase debt outstanding at the end of 1955 (probably the largest element in consumer debt) was probably less than £500 million. Thus this source might account for less than one sixth of the cumulative discrepancy in these data for the years 1948–55.

UNITED STATES

A number of analyses of financial data are published by official and private agencies in the United States. In the present study, attention is directed to certain statements published by official bodies. Each month the *Federal Reserve Bulletin* includes an analysis of "Member Bank Reserves, Reserve Bank Credit, and Related Items," and the "Consolidated Condition Statement for Banks and the Monetary System." The *Survey of Current Business* periodically includes a table on "Sources and Uses of Corporate Funds," and its annual *National Income Supplement* includes a statement of "Estimates of Personal Saving." In 1955, the Board of Governors of the Federal Reserve System published the *Flow of Funds in the United States, 1939–1953.*

TABLE 73. UNITED STATES: MEMBER BANK RESERVES, RESERVE BANK CREDIT, AND RELATED ITEMS, 1951–55

(In billions of U.S. dollars)

	1951	1952	1953	1954	1955
Reserve Bank credit outstanding	25.0	25.8	26.9	25.9	26.5
U.S. Government securities	*25.8*	*24.7*	*25.9*	*24.9*	*24.8*
Bought outright	*(25.6)*	*(24.0)*	*(25.3)*	*(24.9)*	*(24.4)*
Held under repurchase agreement	*(0.2)*	*(0.7)*	*(0.6)*	(—)	*(0.4)*
Discounts and advances	—	*0.2*	—	*0.2*	*0.1*
Float	*1.2*	*1.0*	*0.9*	*0.8*	*1.6*
Gold stock	22.7	23.2	22.0	21.7	21.7
Treasury currency outstanding	4.7	4.8	4.9	5.0	5.0
Currency in circulation	−29.2	−30.4	−30.8	−30.5	−31.2
Treasury cash holdings	−1.3	−1.3	−0.8	−0.8	−0.8
Deposits, other than member bank reserves, with Federal Reserve Banks	−1.1	−1.4	−1.2	−1.5	−1.3
Treasury	*−0.2*	*−0.4*	*−0.3*	*−0.6*	*−0.4*
Foreign	*−0.5*	*−0.5*	*−0.4*	*−0.5*	*−0.4*
Other	*−0.4*	*−0.5*	*−0.5*	*−0.4*	*−0.5*
Other Federal Reserve accounts	−0.8	−0.7	−0.8	−0.9	−0.9
Member bank reserves	20.0	20.0	20.2	18.9	19.0
Required	*19.6*	*20.5*	*19.4*	*18.6*	*18.9*
Excess	*0.4*	*−0.6*	*0.8*	*0.3*	*0.1*

Source: *Federal Reserve Bulletin* (Washington).

The Federal Reserve's analysis of bank reserves, presented here as Table 73, is a consolidation of the accounts of the monetary authorities (i.e., the Federal Reserve Banks, the treasury gold and silver accounts, and other treasury currency accounts). It may be considered to have three parts. The first is a summary of the main assets of the monetary authorities. For the Federal Reserve Banks, these assets, other than items eliminated by consolidation (e.g., gold certificates), are government securities, discounts and advances, and float (i.e., the items sent to the Federal Reserve Banks for deposit through the clearing system and credited to the accounts of member banks prior to final clearance). For the Government's monetary accounts, the assets are the Treasury's gold and silver holdings and an entry equal to the remaining currency issued by the Treasury. The second part is a summary of the liabilities of the monetary authorities other than member bank reserve accounts, plus a net entry for the accounts of the Federal Reserve Banks not included elsewhere in the table. The liabilities are primarily the currency in circulation (including holdings by banks other than Federal Reserve Banks),[1] the Government's claims on the Federal Reserve Banks, and the deposits of other

[1] Under U.S. law, banks may include only deposits with Federal Reserve Banks in their legal cash reserves.

than member banks with the Federal Reserve Banks. The difference between these assets and liabilities must be equal to the third part of the table, the deposits of member banks with the Federal Reserve Banks, which are separated into the minimum required by Federal Reserve regulations and "excess reserves."

The Consolidated Condition Statement, shown here as Table 74, is a consolidated balance sheet of the money and banking institutions subject to federal and state banking laws, i.e., the monetary authorities, the Exchange Stabilization Fund, commercial banks, mutual savings banks, and the Postal Savings System, but excluding some financial institutions that are similar to banks (e.g., savings and loan associations). The assets of the system are classified as gold, treasury currency outstanding (i.e., a counterpart entry to the treasury currency included in the currency component of the liabilities), loans, government obligations, and other securities. The liabilities of the banking system are separated into deposits of foreigners in U.S. banks less deposits of U.S. banks abroad, federal government balances, and other deposits and currency (the deposit data are adjusted to exclude interbank deposits and in-transit items). This last group is subdivided to show time deposits, demand deposits, and currency separately. Thus, it is possible to derive totals that might be considered as the monetary and quasi-monetary liabilities of the monetary system but would not include the quasi-monetary liabilities of other financial institutions. The liabilities of these latter institutions

TABLE 74. UNITED STATES: CONSOLIDATED CONDITION STATEMENT FOR BANKS AND THE MONETARY SYSTEM, 1951–55

(In billions of U.S. dollars)

	1951	1952	1953	1954	1955
ASSETS					
Gold	22.7	23.2	22.0	21.7	21.7
Treasury currency outstanding	4.7	4.8	4.9	5.0	5.0
Bank credit	181.3	192.9	199.8	211.0	216.9
Loans, net	67.6	75.5	80.5	85.7	99.5
U.S. Government obligations	97.8	100.0	100.9	104.8	97.0
Commercial and savings banks	71.3	72.7	72.6	77.7	70.3
Federal Reserve Banks	23.8	24.7	25.9	24.9	24.8
Other	2.7	2.6	2.4	2.2	1.9
Other securities	15.9	17.4	18.4	20.4	20.5
Total assets	**208.7**	**220.9**	**226.7**	**237.7**	**243.6**
LIABILITIES					
Deposits and currency	193.4	20[illegible]	209.2	218.9	224.3
Foreign bank deposits, net	2.3	2.5	2.7	3.3	3.2
U.S. Government balances	5.1	7.0	5.6	5.9	5.3
Treasury cash holdings	1.3	1.3	0.8	0.8	0.8
At commercial and savings banks	3.6	5.3	4.5	4.5	4.0
At Federal Reserve Banks	0.2	0.4	0.3	0.8	0.5
Other deposits and currency	186.0	194.8	200.9	209.7	215.7
Time deposits	61.5	65.8	70.4	75.2	78.2
Commercial banks	(37.9)	(40.7)	(43.7)	(46.8)	(48.1)
Mutual savings banks	(20.9)	(22.6)	(24.4)	(26.3)	(28.1)
Postal Savings System	(2.7)	(2.5)	(2.4)	(2.1)	(1.9)
Demand deposits	98.2	101.5	102.5	106.6	109.7
Currency outside banks	26.3	27.5	28.1	27.9	27.9
Capital and miscellaneous accounts	15.3	16.6	17.5	18.8	19.3
Total liabilities	**208.7**	**220.9**	**226.7**	**237.7**	**243.6**

Source: *Federal Reserve Bulletin* (Washington).

are almost half of the time deposits of the monetary system. While the table shows the type of asset held by the monetary system, it is possible to derive the classification of the system's assets and its liabilities by major economic sector (i.e., including the private sector as one major sector), except that loans to foreigners, state and local governments, and federal government agencies (these are small) are included with those to the private sector (loans to foreigners amount to approximately 5 per cent of total loans).

The statement of the sources and uses of funds by corporations, other than banks, insurance companies, and investment companies, which is published in the *Survey of Current Business*, is given here as Table 75. The investment of these nonfinancial corporations in both real and financial assets is measured. The financing

TABLE 75. UNITED STATES: SOURCES AND USES OF CORPORATE FUNDS, 1951–54[1]

(*In billions of U.S. dollars*)

	1951	1952	1953	1954
Total uses	**39.1**	**30.1**	**27.6**	**20.5**
Plant and equipment	21.6	22.4	23.9	22.4
New	....	22.3	23.7	22.2
Used	....	0.1	0.2	0.2
Increase in other assets, total	17.5	7.6	3.7	−1.9
Inventories	9.4	0.9	2.6	−2.8
Manufacturing	....	*1.0*	*2.1*	*−2.6*
Wholesale	....	*−0.2*	*0.3*	[2]
Retail	....	[2]	*0.1*	[2]
Other	....	[2]	*0.1*	*−0.2*
Receivables	4.7	5.8	0.1	1.2
Consumer	*0.5*	*1.9*	*1.7*	*0.6*
U.S. Government	*1.4*	*0.1*	*−0.8*	*−0.2*
Other	*2.8*	*3.8*	*−1.4*	*0.9*
Cash, deposits, and U.S. Government securities	2.8	0.1	1.2	−1.0
Cash and deposits	*1.9*	*0.8*	*0.1*	*0.8*
U.S. Government securities	*0.9*	*−0.7*	*1.1*	*−1.7*
Other assets	0.6	0.8	−0.1	0.6
Total sources	**38.8**	**30.1**	**27.5**	**20.1**
Retained profits[3]	9.1	6.4	6.8	6.2
Depreciation	9.0	10.4	11.7	13.1
Net new issues	6.3	7.9	7.0	6.1
Stocks	2.7	3.0	2.3	2.2
Bonds	3.6	4.9	4.8	4.0
Increase in other liabilities, total	14.4	5.4	1.9	−5.4
Mortgage loans	0.9	0.7	0.8	1.1
Bank loans	4.5	2.4	−0.3	−2.0
Short	*3.9*	*1.6*	*−0.1*	*−1.4*
Long	*0.6*	*0.8*	*−0.5*	*−0.6*
Trade payables	2.7	2.7	−0.6	−0.7
U.S. Government	*0.9*	*1.0*	[2]	*0.2*
Other	*1.8*	*1.7*	*−0.6*	*−1.0*
Federal income tax liabilities	4.4	−2.9	1.3	−4.1
Other liabilities	1.9	2.4	0.8	0.3
Discrepancy (uses less sources)	0.3	[2]	0.1	0.4

Source: Department of Commerce, *Survey of Current Business* (Washington).
[1] Excluding banks and insurance companies.
[2] Less than $50 million.
[3] Including depletion.

of this investment is also shown by measures of internal sources of funds (i.e., undistributed profits and depreciation) and of borrowing, with the latter classified by type of loan.

The U.S. national income publications contain estimates of saving by the personal sector, compiled by the Securities and Exchange Commission (SEC). In this tabulation, the personal sector includes unincorporated businesses, nonprofit organizations, and farmers. These estimates are related to, but not completely consistent with, other national income estimates of saving by the personal sector. The data are shown here in Table 76. In this table, the changes in owners' equity in residences, the changes in all other real assets owned by farmers and other unincorporated enterprises, and the changes in the financial assets of the personal sector less the increases in personal debt to banks and others are measured. The directly computed estimate of personal saving derived from these data is compared with two alternative estimates of personal saving residually computed from the national income accounts. The first of these is the difference between the national income measurements of personal disposable income and personal consumption expenditure. The second is the original residual estimate plus the statistical discrepancy between the measurements of national income and net national product.

The *Flow of Funds in the United States, 1939–1953* is a comprehensive system of national accounts that is independent of, but the financial counterpart to, the national product and expenditure accounts. The published summary table for 1953 is shown here as Table 77; and a summary for 1955 with a lesser degree of sector consolidation, prepared by the staff of the Federal Reserve Board, is given here as Table 78. The accounts are prepared in the form of complete statements of the sources and uses of funds by the ten major economic sectors (shown in Table 77) and ten subsectors.[2] The tables presented here are only the summaries of the integrated system of accounts prepared by the Federal Reserve staff. The accounts include one set of statements measuring all the transactions by each sector and subsector and another set measuring all the transactions under each source and use classification. The prime purpose of the accounts is to provide detailed information on all uses of money and credit by U.S. residents. This involves the inclusion of intermediate transactions that do not enter the national income accounts, and the exclusion of imputations that are included in measures of income and expenditure. The accounts are designed to bring together in one unified system as much of the available information on transactions as may reasonably be encompassed in one set of accounts. Thus data are drawn from monetary and banking statistics, national income accounts, the SEC estimates of saving, taxation records, and other sources, to provide a consistent set of records of all transactions. The accounts are presented in a form that permits their incorporation into many alternative analytic interpretations.

This system of flows is conceived as a clear alternative to other national accounting systems. National income accounts are primarily designed to account for production, expenditure, and income, by type of product, expenditure, or income source; flow-of-funds accounts are designed primarily to measure the receipts and payments of funds by individual economic units, grouped into significant sectors of the economy. Hence, national product and income accounts measure consumption transactions and production transactions, etc., or wage payments and interest payments, etc.; flow-of-funds accounts aim to measure all transactions of consumers, farmers, financial agencies, etc. Hence, while flow-of-funds accounts are related to other national accounts, they direct their attention to transactions directly or eventually settled in money, rather than to flows of production or consumption. The sectors whose accounts are analyzed are similar to the main producing and consuming groups covered in the national income sector accounts, except that several separate sectors are established for the accounts of

[2] The banking sector account in Table 78 is a consolidation of five subsector accounts.

TABLE 76. UNITED STATES: SECURITIES AND EXCHANGE COMMISSION ESTIMATES OF PERSONAL SAVING AND COMPARISON WITH DEPARTMENT OF COMMERCE ESTIMATES OF PERSONAL SAVING, 1951–55

(In billions of U.S. dollars)

	1951	1952	1953	1954	1955
1. Personal saving in forms other than changes in equity in real property and unincorporated enterprises[1]	**14.26**	**15.30**	**14.52**	**17.60**	**16.83**
2. Currency and bank deposits	5.95	6.85	4.47	6.70	3.93
3. Currency	*0.77*	*1.11*	*0.58*	*−0.29*	*0.39*
4. Demand deposits	*3.22*	*1.50*	*−0.32*	*2.59*	*0.42*
5. Time and savings deposits	*1.96*	*4.24*	*4.22*	*4.40*	*3.12*
6. Savings and loan associations	2.10	3.09	3.65	4.49	4.97
7. Private insurance	4.05	4.88	5.04	5.54	5.93
8. Securities	2.70	4.32	4.59	1.24	7.50
9. U.S. savings bonds	*−0.41*	*0.09*	*0.20*	*0.60*	*0.27*
10. Other U.S. Government	*−0.49*	*−0.02*	*0.20*	*−1.64*	*1.55*
11. State and local government	*0.42*	*0.94*	*1.57*	*0.51*	*1.44*
12. Corporate and other	*3.18*	*3.30*	*2.62*	*1.78*	*4.24*
13. *Less* Increase in debt not elsewhere classified	0.54	3.85	3.24	0.37	5.50
14. Increase in equity in nonfarm residences and in real property of nonprofit institutions	**1.98**	**2.06**	**1.69**	**1.45**	**1.10**
15. Nonfarm dwellings	10.15	10.31	10.91	12.46	15.36
16. New construction by nonprofit institutions	1.38	1.41	1.53	1.87	2.01
17. *Less* Increase in mortgage debt to corporations and financial intermediaries	6.53	6.47	7.25	9.07	12.06
18. *Less* Depreciation	3.02	3.20	3.50	3.82	4.22
19. Increase in equity in selected assets of nonfarm unincorporated enterprises	**2.39**	**−0.37**	**3.74**	**−2.28**	**0.50**
20. Increase in inventories	0.87	0.26	0.43	−0.14	0.96
21. New construction and producers' durable equipment	7.10	6.64	7.75	7.82	9.54
22. *Less* Increase in bank and insurance company debt	0.66	0.52	0.54	2.67	4.48
23. *Less* Increase in net payables to other corporations	0.81	2.33	−0.84	2.17	0.03
24. *Less* Depreciation	4.11	4.41	4.74	5.12	5.51
25. Increase in equity in selected assets of farm enterprises	**0.12**	**1.17**	**0.50**	**0.44**	**−0.44**
26. Increase in inventories	1.40	0.86	−0.62	0.47	0.34
27. New construction and producers' durable equipment	4.67	4.37	4.58	4.29	4.34
28. Net purchases of farms from corporations and financial institutions	—	—	—	—	—
29. *Less* Increase in mortgage debt to corporations and financial intermediaries	0.29	0.35	0.29	0.34	0.57
30. *Less* Increase in other debt to corporations and financial intermediaries	0.96	0.31	−0.36	0.34	0.52
31. *Less* Depreciation	4.71	3.40	3.54	3.64	3.73
32 Personal saving, SEC (lines 1 + 14 + 19 + 25)	**18.75**	**18.15**	**20.45**	**17.21**	**18.28**
33. Personal saving, Commerce	**17.73**	**19.05**	**19.69**	**17.89**	**16.60**
34. Difference between lines 32 and 33	1.02	−0.90	0.76	−0.68	1.68
35. Statistical discrepancy in the national income and products accounts	1.29	1.96	2.59	1.79	1.82
36. Alternative estimate of personal saving, Commerce (lines 33 + 35)	**19.01**	**21.01**	**22.28**	**19.68**	**18.42**
37. Difference between lines 32 and 36	−0.26	−2.86	−1.83	−2.47	−0.14

Source: Department of Commerce, *National Income: A Supplement to the Survey of Current Business* (Washington).

[1] Excludes changes in government insurance and pension reserves, amounting to $4.21 billion in 1951, $4.40 billion in 1952, $3.24 billion in 1953, $2.68 billion in 1954, and $3.20 billion in 1955, and small amounts in Armed Forces Leave Bonds.

TABLE 77. UNITED STATES: SUMMARY OF

(*Annual flows, in*

Transactions	Consumer		Business					
			Corporate		Noncorporate		Farm	
	S	U	S	U	S	U	S	U
NONFINANCIAL								
A. Payroll	195.5	2.7	....	118.7	....	30.0	....	2.6
B. Receipts from and payments on investment	59.4	16.3	9.7	20.0	17.5	40.0	1.1	13.0
C. Insurance and grants	23.9	22.7	1.3	12.2	1.0	3.0	0.4	0.4
D. Taxes and tax refunds	2.6	40.9	0.5	36.0	....	6.8	....	1.1
E. Capital acquisitions	22.0	63.8	0.2	26.7	1.5	6.0	0.4	5.0
F. Net change in inventories	....	....	....	*1.6*	....	*0.9*	....	*0.3*
G. New fixed capital	....	*39.4*	....	*24.9*	....	*5.1*	....	*4.6*
H. Other	*22.0*	*24.4*	*0.2*	*0.2*	*1.5*	[1]	*0.4*	....
I. Purchases and sales of other goods and services	....	155.4	538.3	341.8	195.8	130.2	29.8	10.8
J. TOTAL	303.4	301.8	550.0	555.3	215.9	215.9	31.7	32.5
FINANCIAL[2]								
K. Currency and deposits	....	4.4	....	0.1	....	0.4	....	[1]
L. Federal obligations	....	0.3	....	1.1	....	0.6	....	....
M. Mortgages	6.2	0.6	1.3	....	1.8	0.5	0.4	....
N. Corporate securities and state and local obligations	....	3.2	6.7	0.3	....	−0.6	....	....
O. Other	4.5	4.4	−0.6	0.1	1.6	2.3	0.6	[1]
P. TOTAL	10.7	12.9	7.4	1.6	3.5	3.2	1.0	[1]
Q. Grand total	314.4	314.4	557.4	557.4	219.3	219.3	32.8	32.8
Memoranda								
R. GNP identifiable in J	....	215.1	....	29.5	....	6.9	....	6.9
S. Bank credit in P	3.5	....	0.5	....	1.2	....	0.6	....

Source: Board of Governors of the Federal Reserve System, *Flow of Funds in the United States, 1939–1953* (Wash

[1] S equals sources of funds; U equals uses of funds.

[2] Less than 50 million dollars.

[3] Financial sources of funds represent net changes in liabilities; financial uses of funds represent net changes in

banks and other financial institutions, and the purchases, sales, and financial operations of nonprofit organizations (included in the national income personal sector) are recorded in a separate account as a subsector of the other investors (other financial institutions) sector.

The accounts are designed as a system that reports the total entries that would be shown if every transaction in the economy were recorded under a system of double entry bookkeeping in the accounts of both partners to the transaction. Thus, the accounts measure the entries that would be recorded if each transfer of goods or services were entered in the accounts of both the purchaser and the seller. In the purchaser's accounts it would be recorded as a nonfinancial use of funds, with an offsetting entry in the financial accounts that might be a negative entry in the "use" column recording the decline of currency and deposits or a positive entry in the "source" column recording the increase in trade credit or similar liabilities of the sector. In the seller's accounts it would be recorded as a nonfinancial source of funds, with an offsetting entry in the use column recording an increase in currency and deposits or a negative entry in the source column recording an increase in loans to others. For purely financial transfers (e.g., the transfer of securities), all entries in both purchaser and seller accounts would be in the financial sections of the accounts.

FLOW-OF-FUNDS ACCOUNTS FOR 1953[1]

billions of U.S. dollars)

Government				Financial Institutions						Rest of World		Total	
Federal		State and Local		Banking		Insurance		Other					
S	U	S	U	S	U	S	U	S	U	S	U	S	U
....	19.0	....	13.5	....	1.9	....	2.6	....	4.4	....	[2]	195.5	195.5
1.0	5.5	0.8	1.0	6.2	2.1	3.5	0.3	1.7	1.5	0.5	1.9	101.4	101.4
7.5	14.4	11.9	11.7	[2]	0.3	29.0	16.7	5.7	1.4	2.2	0.3	82.8	83.0
64.8	3.1	21.4	....	....	0.8	....	0.7	....	[3]	....	[2]	89.4	89.6
1.1	4.2	0.1	7.8	....	0.1	[2]	0.2	....	2.1	....	....		
5.0	....	....	....	....	....	....	....	....	....	....	....		
0.3	*4.2*	....	*7.2*	....	*0.1*	....	[2]	....	*2.1*	....	....	820.9	819.5
4.6	*0.1*	*0.1*	*0.5*	....	....	[2]	*0.2*	....	....	....	....		
5[a]	38.8	5.8	6.4	0.8	0.7	0.5	3.4	4.9	3.0	15.8	14.3		
78.4	85.1	40.0	40.4	7.0	5.9	33.0	23.9	12.3	12.4	18.4	16.5	1,290.0	1,290.0
....	−1.6	....	1.0	5.0	....	....	0.2	....	0.2	[2]	0.3	5.0	5.0
5.2	....	....	1.8	....	0.9	....	[2]	....	−0.2	....	0.6	5.2	5.1
....	0.3	....	....	....	2.5	....	2.1	[3]	3.7	....	....	9.8	9.8
....	−0.3	3.6	0.3	0.1	1.1	....	6.5	0.4	0.3	0.1	0.1	10.9	10.8
0.1	3.2	....	....	0.2	1.4	0.3	0.2	4.5	0.9	0.6	1.4	11.8	10.8
5.3	−1.4	3.6	3.0	5.2	5.8	0.3	9.1	5.0	5.0	0.6	2.3	42.6	41.5
83.7	83.7	43.6	43.6	12.2	12.2	33.3	33.3	17.3	17.3	19.0	19.0	1,332.7	1,332.7
....	57.9	....	24.4	....	1.4	....	[2]	....	10.7	....	−1.9	....	350.9
0.9	....	0.7	....	[2]	6.9	....	....	−0.1	....	−0.2	....	6.9	6.9

ington, 1955), p. 4.

financial assets.

The accounts contain a minimum of consolidation or netting. For each of the sectors, other than the Federal Government, the rest of the world, and the banking sector, intrasector as well as intersector transactions are recorded. The importance of this may be indicated by the fact that the gross nonfinancial sources (or uses) of funds recorded for 1955 are 3.5 times the estimated gross national product in that year. The Federal Government (including government-owned enterprises) is, however, regarded as a single decision-making entity, and its accounts are presented in a consolidated form. The transactions of the United States with the rest of the world are consolidated as transactions with a single entry. The monetary and banking system is also treated as a unit, and its accounts are recorded in consolidated form. However, the subsector accounts record the transactions of each significant part of the banking system. Yet there is a dichotomy between the records of nonfinancial transactions and those of financial transactions. The nonfinancial entries record all transactions under each heading. The financial entries record net changes only in the assets and liabilities of each sector. To record all financial transactions, even if data were available, would lead to the inclusion of a large number of short-term purchase and sale transactions. All changes in assets are entered as uses of funds: increases are positive uses and decreases are negative uses. All changes in liabilities are entered as positive or negative sources of funds.

TABLE 78. UNITED STATES: SOURCES AND U

(*In billions of U.S.*

Transactions	Consumer		Corporate Business		Noncorporate Business		Farm		Federal Government		State and Local Governments		Banking System		
	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S
NONFINANCIAL															
Payroll	206.2	2.9	—	124.7	—	31.4	—	2.6	—	18.5	—	16.0	—		—
Interest	8.3	6.7	2.0	4.7	0.4	2.5	[2]	0.8	1.0	5.5	0.6	1.0	7.1		2.9
Dividends and branch profits	11.0	—	3.5	12.6	—	—	0.1	[2]	—	—	—	—	[2]		[2]
Rents and royalties	—	11.2	4.8	5.1	17.3	3.6	1.0	3.0	0.1	0.3	0.2	0.2	0.2		0.3
Insurance premiums	—	19.9	—	11.5	—	4.4	—	0.4	9.4	—	2.2	1.3	—		2.7
Insurance benefits	20.2	—	1.5	—	1.3	—	0.2	—	—	8.1	1.4	2.3	[2]		[2]
Grants and donations	8.6	5.8	0.2	1.2	—	0.1	0.2	—	0.1	9.7	9.6	9.3	—		—
Taxes and renegotiations	—	40.9	—	35.9	—	7.2	—	1.1	63.2	—	24.1	—	—		—
Tax refunds	3.1	—	0.5	—	—	—	—	—	—	3.6	—	—	—		—
Net withdrawals by proprietors	45.5	—	—	—	—	36.4	—	9.1	—	—	—	—	—		—
Real estate transfers	23.4	25.7	0.2	0.1	2.6	—	0.4	—	[2]	[2]	0.1	0.8	—		—
Other goods and services	6.7	223.4	559.8	377.4	211.8	149.9	29.3	15.7	7.1	33.9	6.6	16.2	0.9		0.1
(Private capital expenditures)	(—)	(56.2)	(—)	(27.6)	(—)	(9.1)	(—)	(3.6)	(—)	(—)	(—)	(—)	(—)		(—)
TOTAL	333.0	336.4	572.3	573.3	233.5	235.5	31.2	32.9	80.9	79.6	44.8	47.1	8.2		0.1
FINANCIAL															
Currency and deposits	—	2.0	—	0.4	—	0.1	—	−0.2	—	[2]	—	0.3	0.1		—
Gold and treasury currency	—	—	—	—	—	—	—	—	[2]	[2]	—	—	—		—
Trade credit	4.1	—	4.2	9.7	−0.6	0.9	0.1	—	−0.2	−0.2	—	—	—		—
Bank loans other than mortgages	2.3	—	4.8	—	2.4	—	0.4	—	−1.2	—	—	—	—		—
Federal obligations	—	0.5	—	4.1	—	0.2	—	—	0.4	—	—	1.6	—		—
State and local obligations	—	3.1	—	0.1	—	—	—	—	—	—	5.1	0.4	—		—
Corporate securities	—	2.0	6.3	—	—	0.2	—	—	—	—	—	0.8	0.2		—
Mortgages	11.8	2.2	1.3	—	2.8	—	0.7	—	—	0.3	—	[2]	—		—
Miscellaneous	0.7	5.5	0.3	—	−0.3	0.5	0.2	—	[2]	0.2	—	—	−0.5		[2]
TOTAL	18.8	15.3	16.9	14.3	4.3	1.9	1.4	−0.2	−1.0	0.3	5.1	3.1	5.7		[2]
Valuation adjustment and discrepancy	0.4	0.5	—	1.7	—	0.3	—	—	—	—	—	−0.3	—		—
Total sources	**352.2**	—	**589.2**	—	**237.7**	—	**32.7**	—	**79.9**	—	**49.9**	—	**13.9**		**0.1**
Total uses	—	**352.2**	—	**589.2**	—	**237.7**	—	**32.7**	—	**79.9**	—	**49.9**	—		—
Memorandum: Bank credit	6.0	—	4.5	—	3.3	—	0.6	—	−8.7	—	0.4	—	[2]		—

Source: Prepared for this study by the staff of the Board of Governors of the Federal Reserve System.
[1] S equals source of funds; U equals use of funds.
[2] Less than 50 million dollars.

Hence, for the financial section of the accounts there are negative components in otherwise gross totals.

Partly because of the unavailability of data, all transactions by each sector are not consistently reported in only one account. A national income type of convention has been adopted for the treatment of dual personalities. For unincorporated businesses, all purchases, sales, and credit operations resulting from production,

SOURCES AND USES OF FUNDS, 1955[1]

billions of U.S. dollars)

Banking System		Insurance Sector						Other Investors Sector						Rest of World		Total		Valuation Adjustment and Discrepancy	
		Life insurance companies		Self-administered pension plans		Other insurance companies		Nonprofit organizations		Savings and loan associations		Financial institutions, not elsewhere classified							
S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U
—	—	—	1.6	—	—	—	1.4	—	4.7	—	0.1	—	—	—	[2]	206.2	206.2	—	—
7.1	[illegible]	2.9	0.2	0.4	—	0.3	—	0.1	0.1	1.5	0.8	0.1	0.1	0.1	0.5	24.7	24.7	—	—
[2]	[illegible]	0.2	[2]	0.1	—	0.2	0.2	0.1	—	—	—	0.3	0.5	0.4	1.9	15.8	15.8	—	—
0.2	[illegible]	0.3	[2]	—	—	—	—	0.1	0.4	[2]	[2]	—	[2]	—	—	24.0	24.0	—	—
—	[illegible]	2.7	0.1	2.1	—	15.2	3.3	—	0.4	—	[2]	—	—	0.2	[2]	41.8	41.8	[2]	—
[2]	[illegible]	[2]	7.2	—	0.5	1.6	8.0	0.1	—	—	—	—	—	[2]	0.2	26.3	26.3	[2]	—
—	—	—	—	—	—	—	—	6.2	1.0	—	—	—	—	2.2	0.1	27.1	27.1	—	—
—	[illegible]	—	0.4	—	—	—	0.5	—	[2]	—	—	—	—	—	[2]	87.3	87.3	−0.1	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.6	3.6	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.5	45.5	—	—
—	—	—	0.2	—	—	—	—	—	—	—	—	—	—	—	—	26.8	26.8	—	—
0.9	[illegible]	0.1	1.5	—	[2]	0.1	2.7	5.3	6.5	—	0.1	—	0.1	16.9	16.8	844.6	845.2	−0.6	—
(−)	[illegible]	(−)	(0.1)	(−)	(−)	(−)	(−)	(−)	(2.7)	(−)	(−)	(−)	(−)	(−)	(−)	(−)	(99.4)	(−)	(−)
8.2	[illegible]	3.1	11.3	2.6	0.5	17.4	16.1	11.9	13.1	1.6	1.2	0.4	0.7	19.9	19.5	1,373.6	1,374.3	−0.7	—
6.1	[illegible]	—	0.1	—	—	—	0.1	—	−0.3	—	0.2	—	0.1	0.2	−0.4	6.1	2.2	3.8	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	[2]	[2]	[2]	[2]	—
—	—	—	—	—	—	—	—	0.1	—	—	[2]	—	0.3	—	—	7.6	10.8	−3.1	—
—	[illegible]	—	—	—	—	—	—	0.4	—	[2]	—	—	—	0.5	—	9.6	9.6	0.1	—
—	[illegible]	—	−0.5	—	0.2	—	−0.1	—	0.1	—	0.4	—	0.2	—	1.2	0.4	0.4	[2]	—
—	[illegible]	—	0.2	—	[2]	—	0.9	—	—	—	—	—	[2]	—	—	5.1	5.1	—	—
0.2	[illegible]	—	2.0	—	1.7	—	0.3	—	—	—	—	0.8	0.6	−0.1	0.2	7.1	7.1	—	—
—	[illegible]	—	3.5	—	[2]	—	—	0.1	—	—	5.4	—	0.2	—	—	16.6	16.6	—	—
−0.5	[illegible]	[2]	0.2	—	—	—	[2]	—	—	5.6	[2]	1.5	1.4	0.6	0.5	8.3	8.5	−0.3	—
5.7	[illegible]	[2]	5.3	—	2.0	—	1.3	0.6	−0.2	5.6	6.0	2.3	2.8	1.2	1.5	61.0	60.5	0.5	—
—	[illegible]	—	−0.3	—	0.1	—	[2]	—	−0.5	—	[2]	—	−0.8	—	[2]	0.4	0.2	−0.2	—
13.9	[illegible]	[illegible]	—	2.6	—	17.4	—	12.4	—	7.2	—	2.6	—	21.1	—	1,435.1	—	—	—
—	[illegible]	—	16.3	—	2.6	—	17.4	—	12.4	—	7.2	—	2.6	—	21.1	—	1,435.1	—	—
[2]	[illegible]	—	—	—	—	—	—	0.5	—	[2]	—	0.2	—	0.5	—	7.3	7.2	0.1	—

and all noncorporate business holdings of currency and deposits[3] are allocated to the unincorporated business sector; all consumption expenditure and life insurance transactions, other than employer contributions to private and government

[3] Adjusted for noncorporate holdings by other sectors (mutual insurance plans, etc.).

programs, are allocated to the consumer sector. The net difference between the sources and uses of funds of the noncorporate business sector, computed as indicated above, is entered as a transfer receipt or payment on investment account between the noncorporate business and consumer sectors. This entry combines elements of wages, profits, interest, and capital transfer. The accounts of farmers are similarly allocated to the farm business and consumer sectors, except that some of the consumption expenditure of farmers (e.g., housing) is retained in the farm sector. The accounts of government enterprises are consolidated with the other government accounts. Insofar as the financial surpluses or deficits of government agencies are transferred to or covered by governments, this consolidation should produce no differences in alternative measures of the financial surpluses or deficits of the governments.[4] Insofar as the agencies operate as separate financial entities, the consolidation of their accounts with those of the general government will produce differences between different measures of the government surplus or deficit.

The *Flow of Funds* accounts attempt to record all transactions as they would appear in the accounts of each sector, i.e., on a holder-record basis. Thus the banking system reports deposits as recorded in its books, but a part of these deposits represent amounts against which depositors have written and have sent checks to the payees, but which the payees have not received. Hence, in the books of the payors deposit balances have been reduced, but in the books of the payees deposit balances have not been increased. Therefore, in the records of the nonbanking sectors some of the deposits recorded in the books of the banks have been temporarily vaporized as "mail float." No records of this mail float are available, but there is a record of a comparable float in the accounts between banks. In the absence of data on mail float, an approximate measure of it is made by assuming that it is equal to bank float, despite the fact that the amount of float in different parts of the monetary system will vary at different times in every week, month, and year, and as the float rises or falls in one part of the system there will be a lagged rise or fall in other parts of the system. Hence, the relative levels of bank and mail float will vary from year to year, depending on the day of the week upon which December 31 falls, and the changes in these float elements are large relative to the changes in money holdings by individual economic sectors. A combination of banking system data on deposit ownership and direct estimates of holders' records of money is used to allocate the banking system's deposits and the total of mail float to each sector. In this estimate, the amounts allocated to the consumer sector is a residual. Further, if one part of the flow-of-funds accounts is corrected for mail float, other parts should be similarly adjusted. A large part of consumer mail float represents the discharge of trade credit. However, the entries for consumer liabilities on account of trade credit are taken from lenders' records without adjustment for the checks in the mails discharging this credit. Hence the inclusion of a mail float adjustment in only one part of the accounts introduces a discrepancy in the system of accounts. On the other hand, given the unavailability of bank records on consumer and business holdings of money, the exclusion of an allowance for mail float would have led to an inconsistency between the bank liability and the available holder asset records of money. The flow-of-funds mail float adjustment is an attempt at a solution to the problems raised by the unavailability of data. However, it does not provide a satisfactory solution to the problems.

While the accounts are directed to a measure of the flow of funds, the financial transactions are, in effect, measures of changes in assets and liabilities. For most of the assets and liabilities, data are given for the total outstanding amounts held by each sector. These totals are recorded in the transaction accounts. Hence it is possible to derive partial balance sheets for each sector, but these data are not recorded in the sector accounts where their inclusion might have been more significant. Moreover, currency, demand deposits, and time deposits are shown separately in the banking system accounts only. For each sector, only the total holdings of currency and deposits are recorded, including holdings of foreign currency

[4] In the United States, the operations of state and local governments are relatively large.

and deposits, as well as U.S. money and part of quasi money. From the sector accounts, it is possible to measure *changes* in holdings of currency and demand deposits, but it is impossible to measure the *total* holdings of currency, demand deposits, or the sum of the two, for any sector.

VIET-NAM

The National Bank of Viet-Nam publishes a table analyzing money and its counterpart in Viet-Nam. Data as of the end of 1955 are shown here in Table 79. The table is a balance sheet of the monetary system. Money is defined to include the relatively small amount of deposits that would be considered as quasi money in most other countries. The money held by the Government and agencies with commercial banks is separated from that held by the private sector of the economy. The assets of the monetary system that are the counterpart to money are, in general, classified by the economic sector obligated to the monetary system (almost all the securities and discounts are claims on the private sector). Thus, while no totals are given for the obligations of each of the sectors held by the monetary system, it is possible to derive estimates of the total claims of the monetary system on the Government, the private sector, and foreigners.

TABLE 79. VIET-NAM: COUNTERPARTS TO THE MONEY SUPPLY, 1955[1]

(In millions of Vietnamese piastres)

	1955
Money	**16.75**
Currency	7.50
Deposit money	9.25
Deposits with National Bank, Treasury, and public depositories	3.03
Deposits at banks	6.11
Of official holders	*0.22*
Of private sector	*5.89*
Deposit accounts	*(2.03)*
Current accounts	*(3.37)*
Time deposits	*(0.02)*
Deposits for imports	*(0.47)*
Deposits in National Savings Office	0.10
Counterparts to money	**16.75**
Gold and foreign exchange	4.36
Loans to Government	10.68
To former Government of Indochina	8.33
Consolidated loan to Government of Viet-Nam	2.35
Securities and discounts (deposit-money banks)	0.58
Loans	1.04
On current account	0.72
Guaranteed	0.32
By merchandise	*0.21*
By contracts	*0.06*
Miscellaneous	*0.05*
Counterpart of deposits in National Savings Office	0.10
Foreign exchange of deposit-money banks	0.21
Errors and omissions	−0.22

Source: Banque Nationale du Viet-Nam, *Bulletin Economique* (Saigon).
[1] End-of-year data.

Special Tax Measures to Restrain Investment

Richard Goode*

ALTHOUGH THERE HAS BEEN a remarkable revival of monetary policy in recent years, some countries still hesitate to take vigorous monetary actions and others are handicapped in doing so by the character of their financial institutions. Pursuit of an active monetary policy may be inhibited by the existence of a large unfunded government debt and the reluctance of the authorities to burden the budget by increasing interest rates to the extent that might be required to check an investment boom. The authorities may also be disinclined to push up interest rates because they do not like to cause sharp fluctuations in the market value of publicly held long-term securities and because they are uncertain whether interest rates can be brought down again quickly, if desired. Even when increases in central bank discount rates are made, there is often delay in transmitting these changes to the lending rates of commercial banks and to mortgage rates and bond yields. In the large part of the world in which highly developed financial institutions do not exist, some of the ordinary measures for influencing interest rates either cannot be applied at all or have only a limited effectiveness.

In recent years, however, it has become increasingly evident that a flexible means of controlling the volume of investment can play an important part in maintaining internal stability and equilibrium in the balance of international payments. Resort has been had to various direct controls on credit and investment, but these measures lack many of the advantages associated with impersonal and indirect controls, such as variations in interest rates.

This paper considers the possibility of using special tax measures as a partial substitute for interest rate increases as a means of restraining private investment. These tax measures may be broadly classified in two groups: (1) those that apply to borrowing or lending, and (2) those that apply to investment or the sale of capital goods. The measures examined include special taxes and modifications of deductions allowed in determining net income for purposes of general taxation. There have been a few

* Mr. Goode, Chief of the Finance Division, was educated at Baylor University, the University of Kentucky, and the University of Wisconsin. Formerly economist at the U.S. Bureau of the Budget and the U.S. Treasury and a member of the faculty of the University of Chicago, he is the author of *The Corporation Income Tax* (New York, 1951) and of several articles in economic journals.

suggestions for taxes on loans, but apparently this approach has not yet been adopted by any country. Among the few examples of the second group of measures are taxes on investment outlays imposed in Sweden and Norway in 1955, and postponement of normal depreciation allowances under the income tax in Canada during 1951–52.

Although there has been little experience with such a policy and only a limited amount of study has been devoted to its implications, it appears that certain special tax measures might operate fairly effectively without involving the drawbacks associated with major changes in interest rates and without encountering some of the difficulties attached to direct controls. In this paper, no consideration will be given to the possibility of offering a stimulus to investment by converting some of the measures into subsidies or negative taxes.[1] The budgetary contribution of the special tax measures will not be examined in detail. It may be noted, however, that their efficacy for control of inflation would not necessarily be proportionate to their revenue yield. No revenue would be collected with respect to transactions which were canceled or postponed because of the existence of the special tax measures. On the other hand, if the government should increase its expenditures by the amount of any additional revenue obtained from the special measures, the potential anti-inflationary effect of the measures would be wholly or partly offset—a limitation which applies to any tax increase.

General Comparison with Increase in Interest Rates

In comparing special tax measures with an increase in interest rates, it may be recalled that higher interest rates have traditionally been expected to aid in stabilization not only by discouraging domestic real investment but also by stimulating saving. (In some countries, interest rate changes have been relied on to alter the volume of external investment and the inflow of short-term capital from abroad, but this aspect of stabilization policy will not be considered in the present paper.) Skepticism has been expressed about the sensitivity of investment to interest rates, but there probably would be general agreement that real investment has some degree of interest elasticity, and that changes in interest rates do influence the volume of private capital expenditures. On the other hand, the prevailing opinion now is that the volume of saving and

[1] The possibility of stimulating investment by means of liberalizing depreciation allowances under the income tax is the only phase of the subject which has received much attention. See Richard Goode, "Accelerated Depreciation Allowances as a Stimulus to Investment," *Quarterly Journal of Economics* (Cambridge, Mass.), Vol. LXIX (1955), pp. 191–220.

consumption has very little sensitivity to interest rates, at least in the short run.

If it is true that the supply of savings has little or no interest elasticity in the short run, the changes in income of recipients of interest which are associated with adjustments of interest rates perform no important stabilization function. Indeed, if the interest elasticity of savings is zero, any part of changes in interest income which reflects changes in total money income and not a mere transfer between lenders and profit receivers will have a perverse effect from the point of view of stabilization. Lenders will receive additional income when interest rates are raised for the purpose of restricting aggregate demand and will suffer a loss of income when interest rates are lowered in order to stimulate investment demand. The perverse effect may be small in the short run, inasmuch as higher or lower incomes will be earned only with respect to newly acquired assets or contracts which permit adjustments of interest rates. Furthermore, the perverse effect may be partly or wholly offset by the influence of changes in capital value of previously held financial assets, since a change in interest rates causes an opposite movement in the market value of existing financial assets, such as bonds. Holders of these assets probably tend to adjust their consumption, to some extent, to the value of their assets and the amount of their realized or unrealized capital gains, as well as to their current income.

The influence of interest rate changes on the supply of credit—as distinguished from the volume of savings—may also detract from the potential stabilizing influence of monetary policy. Generally, private savers and banks will remain more liquid when interest rates are low than when they are high. When rates are low, the cost of maintaining liquidity is small and the possibility of speculative gains, as a result of a future rise in interest rates, is great. When interest rates rise, the public is likely to reduce its cash balances relative to income, while the commercial banks squeeze their cash reserves by reducing excess reserves and by rediscounting at the central bank.[2] If the supply of credit is responsive to interest rates and the propensity to save is not, a part of the potential deflationary or expansionary influence of an increase or decrease in interest rates is counteracted, and the authorities must take stronger monetary actions than would otherwise be necessary to obtain a desired contraction or expansion of demand.

The impact on capital costs and on real investment attributable to higher interest rates can be approximated by special tax measures. The increase in capital costs (or the reduction in investment returns) incurred

[2] J. J. Polak and William H. White, "The Effect of Income Expansion on the Quantity of Money," *Staff Papers*, Vol. IV (1954–55), pp. 398–433.

by investors, however, will take the form mainly of payments to the state rather than to lenders. Some additional interest payments and perhaps some rise in interest rates may be induced by certain of the tax measures. For example, if the profit outlook is good, many investors may wish to carry through their investment plans despite the imposition of an investment tax and may attempt to borrow more in order to cover the tax.[3] Increases in interest payments and in interest rates brought about in this way will probably be minor compared with the tax or with the increases that would be necessary to obtain the same deterrent effect through orthodox monetary policy.

The tax approach offers the opportunity of obtaining the positive stabilizing effects of interest rate adjustments with a minimum of unnecessary or perverse effects on lenders' incomes and a minimum of partly offsetting economization of cash balances and bank reserves and with only minor influence on the market value of outstanding securities. The tax measures have the further advantage of contributing revenue at a time when reliance on orthodox monetary policy requires an increase in budget expenditures on account of higher interest payments on unfunded government debt.

A feature of the special tax devices which may be advantageous in some circumstances is the convenience of approximating by these measures some of the economic effects of an assured future change in interest rates. An increase in interest rates will be an especially strong deterrent to long-term borrowing on the part of those investors who expect the higher interest rates to be temporary; by postponing a long-term project, the investor may anticipate a large saving of interest. If the authorities could give assurance that interest rates would decline at a specified future date, the anti-inflationary influence of a temporary increase in borrowing costs would be powerfully supplemented. It may be difficult, however, to give a firm assurance that interest rates will be lower in a year or so because, if this declaration is believed by the public, arbitrage transactions will tend to establish at once the rate that is expected to prevail a little later. The tax approach is not subject to this complication; it is quite possible to impose a special tax measure for a limited period of time and thus reinforce its influence on long-term investment. Since it is always dangerous to undertake a firm commitment on the future course of policy, the authorities will probably wish to be sparing in their use of assured future changes in tax rates.

[3] If the elasticity of demand for investment goods is less than unity, as seems plausible to expect, money outlays for investment (including tax) will increase. With the increase in demand for funds, interest rates will rise unless the supply of credit is perfectly elastic.

Measures Applying to Borrowing or Lending

A tax measure that increases the cost of borrowing or reduces the availability of credit should have much the same effect on the volume of investment as an increase in interest rates. The measure might take the form of a special tax on new loans and security purchases or on interest receipts, a special tax on borrowing or interest payments, or denial of a deduction for interest payments under a general income tax.

The immediate impact of some of the measures would be on lenders, whereas the impact of other measures would be directly on borrowers. It seems probable, however, that the taxes on lenders, if broad in coverage, would be promptly passed on to borrowers, especially under conditions in which the monetary authorities would wish to restrict credit and could raise interest rates by orthodox monetary action. A tax on lending might affect borrowers more promptly than does an increase in the central bank discount rate or open market operations. The tax would offer an easy justification for charging borrowers more, and bankers might not have the same hesitancy in adjusting their loan contracts that they are sometimes said to have when the monetary authorities are attempting to restrict credit by other means. If, for any reason, the taxes on lenders were not fully passed on to borrowers, lending would become less attractive and the availability of credit would be reduced. There would probably be less reliance on informal rationing by bankers and other lenders than in connection with ordinary central bank operations, and this may be considered an advantage of the tax method.

Taxation of loans

One method of taxing lending would be to impose a one-time ad valorem levy on new loans. Lenders could recoup the tax either by increasing interest rates or by adding to the principal a separate charge for the tax while keeping nominal interest rates unchanged. These procedures are equivalent, for they have the same consequences for the effective rate of interest. Thus, for example, if a 5 per cent tax on new loans were fully passed on to borrowers, it would increase the effective interest rate on one-year loans by 5 percentage points regardless of whether the tax was stated as an increase in the interest rate from, say, 4 per cent to 9 per cent, or as a separate charge payable at the maturity of the loan. A one-time ad valorem tax at a uniform rate on the principal would imply an increase in effective rates varying inversely with the maturity of the loan; for example, a 5 per cent tax on the principal would be equivalent to an additional interest rate of 20 per cent per annum on three-month loans, 5 per cent on one-year loans, and 2½ per cent on two-year loans.

If the tax were applied to all new loans, regardless of whether they represented a net increase in credit or renewals of old loans, borrowers would have an inducement to attempt to arrange medium-term or long-term loans when they expected to require a roughly constant amount of credit over a period of time, rather than to rely on a series of short-term loans renewable at maturity. It might be worth while to pay a higher nominal rate of interest on a longer-term loan in order to avoid repeated applications of the tax. The shift in demand might well tend to raise medium-term and long-term nominal interest rates relative to short-term nominal rates.

The impact on short-term and long-term loans could be equalized, at the cost of some additional administrative effort, by applying the tax periodically to outstanding balances or to annual interest receipts or payments.

It is highly unlikely that any country would attempt to impose a tax on all loans or all interest payments or receipts. Some credit operations would be exempted as a matter of policy, and others would probably be excluded because of administrative difficulties.

Exemption would probably be granted for loans to the government and possibly also for loans to other borrowers whom the authorities wished to favor. The exemption of some loans and the taxation of others would establish a two-price system and would tend to divert credit toward the exempt areas. In principle, it would be possible to establish several prices (effective interest rates) by imposing different taxes on loans to different classes of borrowers. The possibility of selectivity would no doubt be one of the attractions of taxation, compared with general monetary operations, but it would have the disadvantage of exposing the system to political pressures for favorable treatment, a danger that has not always been avoided in connection with selective credit controls.

Application to Banks and Other Lenders and to Borrowers

Following a suggestion of Professor H.G. Johnson, Professor J.R. Hicks in 1952 recommended a tax on bank advances in the United Kingdom as a means of controlling credit. Hicks suggested that the Chancellor of the Exchequer be given power to impose and modify the tax, and that in order to achieve maximum flexibility the tax not be regarded as a regular budget measure. Lending to the Government would be exempt. Hicks believed that in the United Kingdom the discount houses should be classed as banks and made subject to the tax. Insurance companies and building societies might be allowed to elect to be classified either as banks or nonbanks. If they chose to be considered nonbanks, they would escape the tax but would not be allowed to hold

short-term government paper. This approach would be intended to prevent these institutions from undercutting the banks by disposing of short-term government paper to make loans.[4] If the tax were restricted to advances, it would not inhibit bank lending through security purchases. One way of closing this loophole would be to apply the tax to all increases in bank assets,[5] presumably after deducting increases in holdings of government securities. It might also be appropriate to allow a deduction from the tax base for increases in bank capital.

Restriction of the tax to banks, however, would limit its effectiveness, even if these taxable institutions were broadly defined and were given the exclusive privilege of holding short-term government securities, as suggested by Professor Hicks. Nonbank financial intermediaries, such as insurance companies, might hold substantial amounts of long-term government bonds and perhaps other marketable securities. These institutions would have an incentive to dispose of their securities in order to extend credit to borrowers denied bank loans at the previous interest rate. If the commercial banks and the central banks absorbed the securities at existing prices, interest rates would be held down, but the monetary effect would be the same as if the loans to final borrowers had been extended directly by the banking system. If the banking system did not absorb all of the securities offered by the nonbank financial institutions at unchanged prices, interest rates would be forced up, and the objective of avoiding an increase in the cost of government borrowing would be partly defeated.

A tax on loans could be fairly easily extended to nonbank financial intermediaries, such as insurance companies and building societies, since these institutions are usually subject to a considerable degree of government regulation and are required to maintain adequate accounting records. Real estate mortgages could also be reached when recorded in official records, regardless of whether the mortgagee were a financial institution or an individual. Security issues, on the other hand, could be most easily reached by a tax on the issuer.

It would be more difficult to apply a tax to loans granted by individuals or small firms to other individuals or small businesses. In countries with well-developed financial institutions, these transactions probably represent only a small fraction of total lending; but in underdeveloped countries, the operations of small moneylenders and other individuals are relatively more important. Even in countries with advanced financial systems, consumer credit could probably be reached less effectively than

[4] J.R. Hicks, *Bulletin of the Oxford University Institute of Statistics* (Oxford), Vol. 14 (1952), pp. 268–72.

[5] H.G. Johnson, *ibid.*, p. 303.

producer credit. The virtual necessity of excluding transactions outside the organized money market might not be a serious weakness of the tax approach, compared with orthodox central bank operations, as interest rates and credit availability for the excluded transactions are not highly responsive to monetary policy in most cases.

Denial of interest deductions under income tax

An arrangement that would apply directly to borrowers would be denial of interest deductions under the income tax. This method would, in effect, impose an annual surcharge on interest payments, thereby increasing the cost of borrowing without directly affecting the return received by lenders. The measure would be powerful only in countries where income tax rates are fairly high and the tax is effectively enforced. Certain administrative problems would be encountered in connection with this apparently simple approach. Perhaps the most serious of these problems would relate to lease contracts which resemble loans. Sale and "lease-back" arrangements have already been developed in various countries, partly for the purpose of avoiding income taxes and direct credit controls. These arrangements usually provide for the sale of a piece of real estate by an owner needing funds to a buyer who agrees to lease the property back to the seller on a long-term basis. The seller obtains funds at once and makes annual rental payments, which are rather similar to interest and amortization on a loan. Ordinary leases less obviously resemble loans, but have considerable economic similarity to them.

Measures Applying to Investment

The second major group of tax measures consists of actions to increase the cost of capital goods or to reduce the return on investment. Sweden and Norway have experimented with special taxes as a means of controlling investment. In 1952, Sweden introduced a special tax on investment in industrial buildings, machinery, and equipment and at the same time imposed an additional duty on production and importation of automobiles and motorcycles. These taxes were allowed to expire in 1954, but in 1955 new taxes were imposed on industrial investment at a rate of 12 per cent and on purchases of new automobiles at a rate of 10 per cent. In early 1955, Norway levied taxes at rates of 10 per cent on new industrial and commercial building, imports of automobiles and tractors, and new

contracts for ships of more than 2,500 gross tons.[6] Sweden and Norway also raised the central bank discount rate during 1955.[7]

An obvious difference between a tax on new investment and a tax on loans is that the former, unlike the latter, applies directly to internally financed investment. Although an increase in market interest rates may inhibit internally financed investment, by making the alternative of buying securities more attractive relative to real investment, this effect is generally thought to be slower and weaker than the influence on externally financed projects. Since internally financed investment is an important fraction of the total in most countries, the possibility of obtaining broader coverage by a tax on investment would be an important advantage, compared with either a tax on loans or an increase in interest rates. It would also be possible to apply the tax to the main "investments" of consumers by imposing suitable excises on consumer durable goods and residential construction. On the other hand, it might not be feasible in many countries to tax inventory accumulations, and it would be difficult to apply a direct tax to the investments of small firms.

In the following discussion, it will be assumed that the special measures would not cause a change in the factor cost of investment goods, that is, the prices, exclusive of tax, at which these goods are supplied. In other words, measures applying to purchasers of capital goods are assumed to occasion no change in market prices of the goods, whereas taxes applying to the production, sale, or import of capital goods are assumed to cause market prices to rise by the amount of the tax. (According to the usual theory of tax incidence, the assumption adopted is that appropriate for an excise tax on a good produced under conditions of constant costs per unit.) This assumption is probably not entirely realistic, particularly for an investment tax of broad coverage, but it does not seem seriously misleading. To the extent that the ex-tax prices of investment goods were reduced, the special tax measures would absorb income of producers of these goods and would still be anti-inflationary.

[6] Certain exemptions to the tax on ship contracts were granted in June 1955, retroactive to February 1955.

[7] Replies to a questionnaire addressed to about 3,000 Swedish industrial companies indicate that the investment plans of nearly 60 per cent of the respondents were not immediately affected by either the monetary measures of 1955 or the investment tax. It should be noted, however, that small firms were exempt from the investment tax. Among firms which did indicate that their investment plans were curtailed, 42 per cent of the reduction was attributed to the investment tax, 30 per cent to the difficulty of obtaining credit, 8 per cent to the interest rate alone, and 20 per cent to a combination of the measures (International Monetary Fund, *International Financial News Survey*, Washington, June 15, 1956, pp. 390–91, reporting an article in Svenska Handelsbanken, *Index*, Stockholm, April 1956). The central bank's discount rate was increased from 2.75 per cent to 3.75 per cent in April 1955, and the yield of long-term government bonds rose from an average of 3.37 per cent in the first quarter of 1955 to 3.82 per cent in the second quarter (*International Financial Statistics*, Washington).

Effect on investment returns

On the incidence assumption stated above, an ad valorem tax on new investment or purchases of new capital goods would raise by an equal percentage the return that must be earned to permit recovery of the amount invested. For example, to permit recovery of invested capital, an asset costing 100 must be expected to yield an average annual return (net of income tax but including depreciation allowances) of more than 50 if its economic life is 2 years, more than 10 if its life is 10 years, or more than 4 if its life is 25 years. A 10 per cent tax would raise to 110 the cost of the capital goods formerly costing 100 and would increase the annual earnings necessary to permit recovery of the investment by 10 per cent—to more than 55, 11, or 4.4 for the illustrations just mentioned.[8] Imposition of the tax, therefore, would cause investors to exclude from favorable consideration the range of investment opportunities expected to yield returns between the old and the new (higher) acceptable minimums. This range may cover a large or a small volume of potential investment, depending on the tax rate and businessmen's expectations concerning profit opportunities.

Comparison with increase in interest rates

In order to draw an exact comparison between a special tax on investment and an increase in interest rates as a means of restraining capital outlays, it would be necessary to know precisely how interest rates influence investment decisions. Knowledge of this subject is unfortunately limited. Three possible attitudes may be considered. Businessmen may think of a rise in interest rates as occasioning additional out-of-pocket costs on borrowed funds; an increase in the imputed cost of using equity capital, as well as an increase in the cost of borrowing; and an increase in the discount rate applicable to expected future investment income. Both the second and third attitudes are based on recognition of the opportunity cost involved in investing capital, but they lead to different evaluations of investment opportunities in some cases and may be usefully distinguished.

For investors who look on interest merely as an out-of-pocket cost, the significance of higher interest rates will vary with the proportion of their capital outlays which is financed by borrowing and the maturity of the credits. Hence no one figure can be computed to represent the change in interest rates that would affect out-of-pocket costs to the same extent as a specified tax on investment. It is evident, however, that in many

[8] With a further allowance for interest and risk, all these figures will be raised, but the generalization about the relation between the minimum acceptable returns with and without tax will still hold.

instances a large increase in the applicable interest rate would be required, since investments are seldom financed entirely by borrowing and the maturity of loans obtained for this purpose is often shorter than the expected economic life of the assets.

For investors who include in their cost calculations imputed interest on equity capital as well as interest on borrowed funds, a tax payable at the time an investment is made would involve not only an increase in the original cost of the capital goods, which would be reflected in higher annual depreciation charges, but also an additional annual carrying cost attributable to the larger size of the investment necessary to obtain a specified income. On the assumption that depreciation is charged on a straight-line basis and is covered by earnings each year, a 10 per cent tax on new investment would increase average annual costs by the same amount as a rise in the interest rate from, say, 5 per cent to 15.5 per cent for an asset with a 2-year economic life, 5 per cent to 7.5 per cent for a 10-year asset, and 5 per cent to 5.9 per cent for a 50-year asset.[9] The tax and the interest rate increases would therefore reduce by equal amounts the average net return from the investments.[10] For short-lived assets the indicated increase in the interest rate is drastic, but for long-lived assets the increase is comparable in size to the changes that are in practice brought about from time to time by monetary action.

With the discounting technique, an investment tax and an increase in interest rates would be equivalent if they influenced in the same way the relation between the cost of capital goods and investors' evaluations of the present value of the streams of income expected from various projects. On the assumption that yields accrue at a steady rate from day to day throughout the asset's life, it can be shown that a 10 per cent tax on new investment is equivalent to raising the discount rate from 5 per cent to 14.8 per cent for an asset with a 2-year life.[11] The equivalent increases

[9] The increases in average annual costs would be equal when

$$tC/n + i\ (tC/2) = \Delta i\ (C/2),$$

where t = the investment tax rate
C = the original cost of the investment exclusive of tax
n = the economic life of the asset, in years
i = the original interest rate.

[10] The percentage rate of return, net of interest, would fall more with the tax, since the amount invested would be larger in this case. Some investors might consider this a reduction in the reward for assuming risk and a further deterrent to investment.

[11] This assumes that discount is continuously compounded. With a 5 per cent discount rate, a 2-year asset costing 100 will be just worth acquiring if it is expected that the cumulative return in each year will be 52.5, for the present value of these returns (distributed evenly over the 2 years and subject to continuously compounded discount) is equal to the cost of the asset. A 10 per cent investment tax would raise the cost of similar assets to 110 and, at a 5 per cent discount rate, they would not be worth acquiring unless the expected return were at least 57.8

for an asset with a 10-year life is from 5 per cent to 7.1 per cent, and for a 50-year asset, from 5 per cent to 5.6 per cent. Illustrative figures for other rates of investment tax are given in Table 1. The taxes and increases in discount rates are equivalent in the sense that, on the assumptions stated above, they would exclude from favorable consideration the same range of otherwise acceptable investment opportunities. The taxes would do so by increasing the cost of capital goods without affecting the expected returns or their discounted value; the increase in discount rates would reduce the discounted value of expected yields without affecting the cost of capital goods.

TABLE 1. INCREASES IN DISCOUNT RATES EQUIVALENT TO VARIOUS AD VALOREM TAXES ON INVESTMENT:[1] INITIAL DISCOUNT RATE, 5 PER CENT

(*In percentage points*)

Tax Rate	Economic Life of Asset		
	2 years	10 years	50 years
5 per cent	5.0	1.1	0.3
10 per cent	9.8	2.1	0.6
15 per cent	14.6	3.1	0.9
25 per cent	23.6	5.1	1.4
50 per cent	44.6	9.6	3.0

[1] Approximate values with discount continuously compounded and assuming level returns. See text for explanation of concept of "equivalence."

Although it seems unlikely that the rather complex discounting procedure is widely used by businessmen in evaluating investment opportunities, there are indications that many large investors make explicit allowance for the imputed interest cost of investing their own funds. The rate at which this allowance is calculated is probably not highly responsive to short-period variations in interest rates, but it may tend to move parallel with market rates of interest over a longer period of time. Even those investors who are not sensitive to changes in interest rates might take into account the existence of a tax on investment, inasmuch as no subtle computations would be required to show that the tax increased the original cost of capital goods.

Despite the difficulty of selecting an appropriate set of assumptions on which to base a numerical comparison of investment taxes and increased

per year. Thus the tax would exclude from favorable consideration 2-year assets *with returns between 52.5 and 57.8. In the absence of the tax, an increase in the* discount rate from 5 per cent to approximately 14.8 per cent would have the same effect, since the present value of expected returns of 57.8 per year would be reduced to 100, the cost of the asset.

interest rates, it may safely be concluded that an investment tax of the order of, say, 10 per cent would have as much effect on the profitability of investment in short-lived and medium-lived assets as would an increase in interest rates that is large in comparison with the changes that ordinarily occur. The influence on long-lived assets would be much less marked but still significant.

The fact that a uniform investment tax would be equivalent to a greater increase in the interest rate for short-lived investments than for long-lived investments does not necessarily imply an objectionable discrimination against the former. In well-developed money markets, short-term interest rates often rise relative to long-term rates during a period of credit restraint that is expected to be temporary. If short-term and long-term rates rise equally, it is generally believed that long-lived projects are more strongly discouraged than are short-lived projects. A special deterrent to long-term investment helps conserve capital and may be desirable for a country that must adjust to a permanent scarcity, but it is less necessary or appropriate in meeting a temporary threat of inflation.

Scope of tax on investment

Like a tax on new loans, a tax on investment could be employed in a selective manner. The tax would not apply to government investments; and private investments to which the authorities wished to give priority might also be exempted. Selectivity would be easier to achieve if the special taxation should take the form of a direct tax on the investor than if it should consist of excises and customs duties on capital goods. Selective exemption of certain end-users from the indirect taxes, however, would not be out of the question.[12] It would be comparatively difficult to apply even a direct tax to inventory accumulations, and this kind of investment might have to be exempted as a matter of administrative expediency, even though its control might be highly desirable from the policy standpoint.

Modification of depreciation allowances

Deferment or denial of normal depreciation allowances under a general income or profits tax would be an alternative to a tax on new investment as a means of influencing the volume and timing of private capital outlays. Either deferment or cancellation of normal depreciation allowances with respect to investment carried out during an inflationary period

[12] Exemptions or tax refunds are granted in many countries to certain purchasers of commodities subject to excise taxes or customs duties.

would curtail the amount of tax-free funds available to business firms for purchasing capital goods and repaying loans obtained to finance new investment. Complete denial of normal allowances would reduce the profitability of the investments affected, and when income tax rates were high would turn a prospective profit into a loss on many projects. Deferment of allowances, although a less drastic measure, would adversely influence profit calculations to the extent that investors applied a discount for interest and risk on the deferred allowances.

During the Korean war boom, Canada experimented with deferment of depreciation allowances as a means of deterring unnecessary investment. The plan, introduced in April 1951, established three classes of investments, presumably on the basis of essentiality and relation to the defense program. For one class of investments, the deferment did not apply; for a second class, it applied generally but a government department could issue permits granting exemption in appropriate cases; for the third class, consisting of investments deemed to be of a less essential character, no exception to the deferment provision could be made. The original plan contemplated a 4-year deferment period, but by the end of 1952 the economic situation had eased and the deferment of depreciation allowances was ended.[13]

Although it is not possible to disentangle the influence of other factors, including direct controls on the use of scarce materials, from the effect of deferment of depreciation allowances, it is interesting to note that the various categories of investment in Canada did show significantly different movements in 1951–52 (when the deferment scheme was in operation) and in 1953 (the year after its termination). Indices (1950 = 100) of the value of investment by firms subject to income tax are as follows:[14]

	Actual		Intended [15]
	1951	1952	1953
1. Total	124	141	143
2. Not subject to deferment regulations	116	140	139
3. Eligible for exemption permit	270	330	294
4. Not eligible for exemption from deferment	90	76	98

[13] Minister of Finance, *Budget Speech, April 10, 1951* (Ottawa, 1951), pp. 12–13; M.W. Sharp, "Deferred Depreciation Reviewed," *Canadian Tax Journal* (Toronto), May–June 1953, pp. 277–86.

[14] Derived from M.W. Sharp, *op. cit.*, p. 285. Mr. Sharp—Associate Deputy Minister in the Department of Trade and Commerce, which administered the regulations granting permits for exceptions to the deferment scheme—concluded that the plan "appeared to produce results of the kind the government had intended" (p. 283).

[15] As indicated by a survey of investment intentions.

An Institutional Problem

A possible institutional disadvantage of taxation as a substitute for changes in interest rates arises from the fact that in most countries taxation is subject to closer and more elaborate legislative controls than are changes in interest rates. Typically, important modifications of taxation require either action by the parliament or at least a formal executive decree issued under conditions prescribed by the legislative body or by the constitution. Action to bring about changes in interest rates, on the other hand, can usually be taken at the discretion of the monetary authorities, subject only to the most general accountability to parliament. For this reason, taxation might be less flexible as a means of regulating investment than is interest rate policy, particularly in countries with developed financial systems and well-established central banks where the monetary authorities can in practice easily use their legal powers to alter interest rates. It is important to recognize, however, that there is often a considerable delay in transmitting the effect of actions by the central bank to final borrowers; the comparable delay in the taking effect of special tax measures is likely to be shorter, which would partly compensate for slowness in obtaining necessary legislative or executive action.

It seems, furthermore, that the distinction between the real effects of changes in interest rates and of special taxes of the kind discussed in this paper is in fact not so profound as to require a great difference in the degree of legislative control. The substance of property rights would not be altered by special taxes to a significantly greater degree than they are in practice altered by changes in interest rates, which affect the market values of securities and other capital assets, and by bank reserve requirements and other credit restrictions imposed by the monetary authorities. Both special taxes and changes in interest rates can also influence the use of economic resources and the distribution of income. These considerations encourage the belief that it might be possible to find acceptable arrangements which would enable special taxes of the kind reviewed in this paper to be used with the degree of flexibility that is essential for successful countercyclical regulation of the volume of private investment.

An Experiment with a Flexible Exchange Rate System: The Case of Peru, 1950–54

S. C. Tsiang*

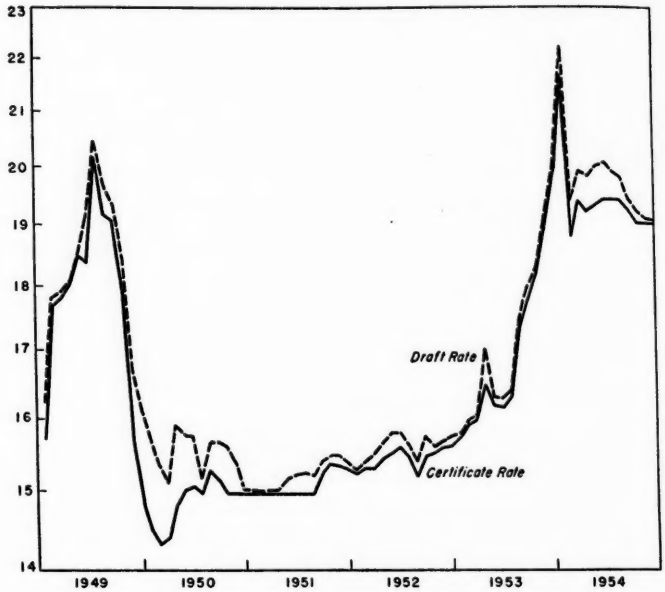
THE GOVERNMENT OF PERU, largely on the recommendation of an economic and financial mission which a U.S. firm of consultants[1] had been invited to send to Peru, adopted in November 1949 a system of dual fluctuating exchange rates: a certificate rate applying to most trade transactions and to some approved nontrade items and a draft rate for all other transactions. Up to October 1954, when the certificate rate was pegged by the Central Reserve Bank at 19.00 soles per U.S. dollar, both rates were permitted to fluctuate (Chart 1). The reform of November 1949 was followed by an immediate strengthening of the sol in both the certificate and the draft markets, although the trend in export prices was unfavorable up to the outbreak of the Korean war. From the outbreak of the war to the end of 1952, when export prices were very favorable, the exchange rates were remarkably stable, despite considerable internal monetary expansion. In 1953, however, the certificate rate depreciated by 28 per cent, because world market prices of Peruvian exports fell sharply while domestic costs and prices continued to rise on account of internal inflation. Exchange rate stability was restored in 1954 as the decline in export prices ended and some internal stabilization measures became effective in the second half of the year. Although it was known that, from time to time, the monetary authorities intervened by buying or selling, in order to smooth out short-term fluctuations in the certificate rate, it was claimed that no attempt was made during this period to prevent long-term adjustments. Thus, for nearly five years, Peru provided an interesting example of a fluctuating exchange rate system.

* Mr. Tsiang, economist in the Special Studies Division, is a graduate of the London School of Economics, and was formerly Professor of Economics in the National Peking University and the National Taiwan University. He is the author of *The Variations of Real Wages and Profit Margins in Relation to Trade Cycles* and several articles in economic journals.

[1] Since this mission was presided over by Mr. Julius Klein, it is commonly referred to as the Klein Mission.

CHART 1. EXCHANGE CERTIFICATE RATE AND DRAFT RATE OF PERU, MONTHLY, 1949–54

(In soles per U.S. dollar; logarithmic vertical scale)



Peruvian Exchange Practices Before November 1949

A system of severe exchange restrictions was first imposed in Peru in January 1945. It was modified from time to time but, under the impact of recurrent inflationary pressures, there was constant difficulty in attempting to maintain balance of payments equilibrium. A new exchange system was accordingly adopted in December 1948. All exporters, except producers of gold, were required to take 55 per cent of their export proceeds in the form of exchange certificates from the Central Reserve Bank and to sell the remaining 45 per cent to the Central Reserve Bank at the official buying rate of 6.485 soles per U.S. dollar. Gold producers received exchange certificates for 100 per cent of their output, and similar treatment was extended in August 1949 to exporters of minerals and exporters to the sterling area. The maintenance for nonmineral exports (which normally constitute well over 60 per cent of

Peru's total exports) of the requirement to sell 45 per cent of exchange proceeds to the Central Reserve Bank at the official rate implied a discriminatory export tax, from which exports of minerals were free.[2]

Under the system adopted in December 1948, exchange was provided for imports of essential goods, i.e., basic foods and medicines (constituting about 20 per cent of total imports), at the official selling rate of 6.5 soles per dollar. For all other imports that were not prohibited, exchange had to be acquired by purchasing exchange certificates in the certificate market. This implied a discriminatory subsidy on imports of essential goods, the avowed purpose of which was to prevent encroachment of the demand for nonessential imports upon the foreign exchange available for essential imports, so that an "adequate" supply of essential imports could be assured for domestic consumers.

Significance for Export and Import Rates of 1949 Exchange Reform

The reform of November 1949 simplified the exchange system as a whole, but the use of exchange certificates was still maintained. Exporters were required to surrender their exchange proceeds to the Central Reserve Bank, receiving in return exchange certificates, to the extent stipulated by the Government; for the greater part of the period concerned, this requirement covered 100 per cent of U.S. dollar, sterling, and French franc proceeds, and 10 per cent of Argentine peso proceeds.[3] These certificates were freely negotiable, but were valid for only a limited period, after which they had to be sold to the Central Reserve Bank at the current certificate rate less 2 per cent.[4] The surrender requirement

[2] With a pre-reform certificate rate of, say, 17.93 soles (the monthly average certificate rate for October 1949), nonmineral exporters, who had to surrender 45 per cent of their export proceeds at the official rate of 6.485 soles per dollar, received an average of only 12.78 soles per dollar's worth of their exports. They were thus in effect obliged to pay a discriminatory export tax of 29 per cent ad valorem.

[3] The surrender requirements varied from time to time, however. For instance, on March 21, 1951 the percentage of export proceeds in dollars and French francs that had to be converted into certificates was reduced from 100 per cent to 75 per cent, and on April 23 of the same year it was further reduced to 50 per cent. But it was again raised to 75 per cent on May 10 and 100 per cent on May 16, 1951. The percentage of export proceeds in sterling required to be converted into certificates was reduced to 10 per cent for the period from April 13, 1951 to April 7, 1952.

[4] At first, the period of validity of all certificates was established at 60 days on the recommendation of the Klein Mission. In May 1951, the period of validity for certificates in dollars and French francs was reduced to 15 days. In January 1954, when the sol was under great pressure, the validity period for all certificates except those in Argentine pesos, a perennial surplus currency, was further reduced to only 5 days. Toward the end of the year, when Peru's balance of payments

was imposed in order to channel export proceeds into the certificate market, to meet the demand for imports and other authorized uses of foreign exchange. Receipts from invisibles were free of control and could be sold in the draft market. By abolishing the requirement that 45 per cent of export proceeds had to be sold at the unfavorable official exchange rate, the implicit discriminatory tax on the greater part of Peru's exports was eliminated.

At the same time, the implicit subsidy on imports of so-called essential goods also disappeared. There were no longer any exchange transactions at the official exchange rate, and quantitative import controls were removed. At first there was a list of prohibited imports, but this was soon reduced, and on January 30, 1951 it was abolished; however, in November 1953, imports of automobiles were banned temporarily because of the sharp worsening of Peru's balance of payments and the rapid depreciation of the sol. This ban was replaced by a quota restriction in August 1954. Importers could obtain exchange either by purchasing in the market exchange certificates for which the authorities provided the corresponding exchange, or by buying exchange directly in the draft market.

Payments for certain types of current invisible transactions, and even for some capital transactions, when authorized by exchange licenses, could be made in certificate exchange.[5] Exchange for other nonapproved invisible transactions could be bought only in the draft market.

By allowing the certificate market to determine a single exchange rate that would maintain equilibrium in the balance of payments, and by applying that rate uniformly to all exports and imports, the exchange reform of November 1949 enabled Peru's foreign trade to be carried on closer to the optimum level, where the marginal cost of a unit of any export is equated to the value of the imports that can be brought back in exchange for it.[6]

---

position had greatly improved and the sol had been stabilized, the validity period of all certificates was established at 10 days, except those in Argentine pesos, which continued to be valid for 60 days.

[5] The types of payment eligible for, and usually permitted in, the certificate market included freight and transit expenses, interest payments and dividends on foreign capital, royalties, agents' commissions, repayment of commercial debts, payments for insurance related to merchandise trade, remuneration of foreign technicians, etc.

[6] The volume of Peru's trade is small. The chief exports are cotton, sugar, metals, and petroleum, the markets for which are highly competitive. The prices of these exports in world markets are, therefore, beyond the control of Peru. Similarly, the foreign prices of Peru's imports are independent of Peru's actions. Consequently, the argument for a tariff or for discrimination in order to improve the terms of trade is unimportant for Peru.

Relationship Between Certificate and Draft Markets

The establishment of two separate markets for foreign exchange was intended to prevent volatile speculative capital movements from disturbing the flexible certificate rate, which applies to current transactions, while giving the full freedom to capital movements regarded as necessary to attract an inflow of foreign investment. The limitation on the period of validity of exchange certificates was also intended to protect the certificate rate from speculative influences by discouraging the holding of certificates in anticipation of its appreciation, though speculation in the form of postponement of exports and speeding up of imports (or the reverse) could not be prevented.

The adoption of two separate markets meant that a specified percentage of export proceeds must flow into the certificate market and that the supply of foreign exchange in that market could be drawn upon only to meet import demands and for approved payments for invisibles and capital transactions. To meet other demands for foreign exchange, drawings had to be made on the uncontrolled supplies allowed to flow into the draft market. Theoretically, the exchange rates in the two separate markets were free to move divergently, but there were implicit links between the demands and the supplies in the two markets.

One obvious link was created by the fact that all the foreign exchange demands for which drawings in the certificate market were permitted could also be met by drawings upon the supplies in the draft market, although the reverse was not true. This ensured that the draft rate would not fall below the certificate rate; otherwise, all the demands in the certificate market would be shifted to the draft market, thus forcing the certificate rate down and the draft rate up. But this asymmetric link between the two markets could not prevent the draft rate from rising above the certificate rate, since the demands on the draft market could not be transferred to the certificate market to take advantage of a more favorable rate in the latter.

Nevertheless, except during the periods November 1949–November 1950 and February–June 1954, the draft rate seldom exceeded the certificate rate by more than 2 per cent (Chart 1). Since the authorities are known to have interfered from time to time to smooth out short-term fluctuations in the certificate market but to have left the draft rate entirely free to find its level, the persistent narrowness of the spread between the two rates over a long period of time in spite of fluctuations in both of them suggests that there must have been other links between the two markets. One such link might have been provided by the underinvoicing of exports which would have enabled a clandestine diversion

TABLE 1. BALANCE OF PAYMENTS OF PERU, 1949–54[1]

(In millions of U.S. dollars)

	1949	1950	1951	1952	1953	1954
A. Goods, Services, and Donations						
1. Exports, f.o.b.	166.5	194.1	254.3	242.4	226.4	253.7
2. Imports, f.o.b.	−140.9	−143.6	−215.0	−253.0	−251.4	−216.8
	25.6	50.5	39.3	−10.6	−25.0	36.9
3. Nonmonetary gold	4.6	4.4	4.2	5.1	3.9	2.7
4. Transportation and insurance	−22.6	−31.9	−46.4	−35.9	−33.9	−28.5
5. Investment income	−11.3	−9.6	−21.5	−20.6	−20.4	−21.8
6. Other services	1.9	−20.7	−13.9	6.0	4.5	−1.7
7. Donations (including technical assistance grants)	4.4	3.9	4.0	8.7	6.7	4.8
Total	2.6	−3.4	−34.3	−47.3	−64.2	−6.8
B. Long-Term Capital Transactions						
8. Foreign direct investment	2.5	−8.2	30.2	50.3	37.4	19.7
9. Drawings on Export-Import Bank loans	—	—	—	6.5	11.4	1.6
10. Official amortization	−3.2	−0.9	−4.3	−3.3	−3.5	−2.1
11. Long-term assets of commercial banks	—	0.1	−0.1	0.1	−0.1	−0.1
Total	−0.7	−9.0	25.8	53.6	45.2	19.1

TABLE 1—*Continued*

C. Short-Term Capital Transactions						
12. Private foreign assets held through Peruvian banks (net increase –)	—	−10.6	11.0	−0.2	−2.0	−1.6
13. Private dollar balances in U.S. (net increase –)	—	3.3	−0.7	−13.9	−3.3	−9.5
14. Import collections (net increase +)	4.9	16.3	6.5	7.9	3.3	4.2
15. Commercial bank assets, including monetary gold (net increase –)	—	1.8	−2.8	2.8	1.1	0.1
Total	4.9	10.8	14.0	−3.4	−0.9	−6.8
D. Net Errors and Omissions	−1.0	1.6	4.0	−2.9	1.5	−1.6
E. Total (A through D)	5.8	—	9.5	—	−17.9	6.6
F. Compensatory Official Financing						
16. Liabilities to IMF	—	—	—	−3.1	—	—
17. Government and Central Reserve Bank foreign exchange (increase –)	2.2	3.0	5.2	3.1	−1.5	−8.0
18. Central Reserve Bank monetary gold (increase –)	−8.0	−3.0	−14.7	—	9.4	1.4
19. International Petroleum Company loan	—	—	—	—	10.0	—
Total	−5.8	—	−9.5	—	17.9	−6.6

[1] Based on data from International Monetary Fund, *Balance of Payments Yearbook*. No sign indicates credit; minus sign indicates debit.

of exchange from the certificate market to the draft market. It is unlikely, however, that such illegal measures took place to any important extent, since the spread between the two rates was seldom large enough to provide adequate incentive to take the risk and trouble involved. A more important link is probably found in the fact that, throughout this period, Peru was consistently a net importer of capital. Particularly after the boom in raw material prices following the Korean conflict, there was a surge of foreign direct investment in mining and oil. In 1950 there was a net repatriation of foreign direct investment of $8.2 million,[7] but thereafter there was a net inflow, which increased from $30.2 million in 1951 to $50.3 million in 1952, and then declined to $37.4 million in 1953 and $19.7 million in 1954 (Table 1).

Although most of these direct investments probably took the form of imports of equipment and materials by foreign firms, financed with their capital resources abroad, it is conceivable that, whenever the spread between the draft rate and the certificate rate tended to widen, it may have become worth while for some of these investing firms to sell part of their foreign exchange funds on the draft market and use the sol proceeds to buy certificates for their imports of equipment and materials rather than use their foreign exchange resources directly on such imports. Such arbitrage operations would at once increase both the supply of foreign exchange to the draft market and the demand for foreign exchange on the certificate market, and hence tend to narrow the gap between the two rates. Probably this possibility of arbitrage on the part of foreign investors was primarily responsible for maintaining the remarkably narrow spread between the two rates.

This hypothesis is borne out by the relative movements of the two rates over the five-year period. During the three years 1951–53, when, as pointed out above, the inflow of direct investment was particularly heavy and when, in consequence, the private capital account of the balance of payments (including both long-term and short-term capital transactions) was always in substantial surplus, the spread between the two rates was invariably very small. Even in 1953, when the sol was under great pressure and depreciated considerably in both markets, the spread remained very narrow.

[7] The negative figure for 1950 may be the result of statistical inaccuracies rather than an actual net withdrawal of foreign investment for that year. In that year there was an unusually large net increase in import collections: $16.3 million, against $6.5 million for 1951, $7.9 million for 1952, $3.3 million for 1953, and $4.2 million for 1954. A considerable proportion of the inflow of direct investment, which consisted largely of imports of capital goods by the investors themselves, had probably been registered as credit for imports and hence inflated the latter to an unusual proportion. From a comparison of this unusually large entry with those of later years, it may be inferred that there may have been a positive though small net inflow of direct investment even in 1950.

The exceptionally wide spread between the two rates in the first half of 1950, and the unusually long period that elapsed before it narrowed to any extent, can also be explained by the small inflow, and possibly net withdrawal, of foreign direct investment during 1950. Direct investment was rather slight for 1950 as a whole, and such net inflow as did occur was probably concentrated in the second half of the year. There was, therefore, little possibility of transferring capital from the direct financing of imports to the draft market to narrow the gap between the two rates.

The gap widened again in February–June 1954, probably because of the sharply reduced rate of inflow of direct investment and the equally sharply increased rate of outflow of private short-term capital in 1954.[8]

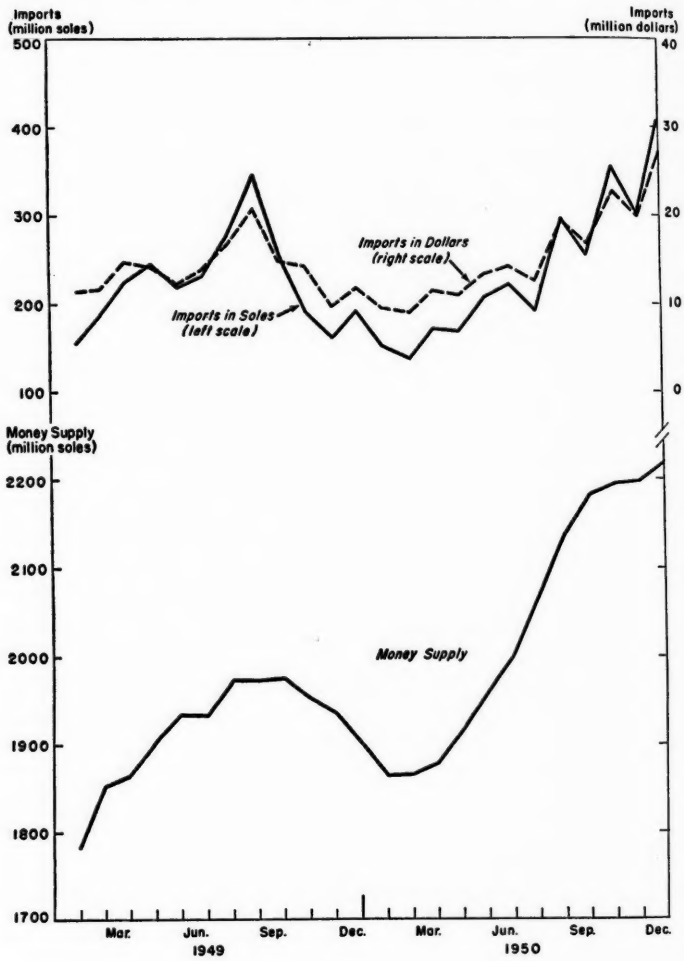
Initial Strengthening of the Certificate Rate

The exchange reform of November 1949 was followed by an immediate strengthening of the sol in the certificate market. In October 1949, the month preceding the reform, the monthly average certificate rate had been 17.93 soles per U.S. dollar; in November, it was 15.68 and in December, 14.81. This was, indeed, a continuation of a trend that had started in August; in July the average certificate rate was 20.17 soles, but in August it dropped to 19.13 and in September to 19.04.

There was a strengthening of the sol prior to, as well as immediately after, the November reform; in both instances, the strengthening appears to have been due, to a large extent, to the curtailment of imports brought about by monetary contraction. After the reform, the abolition of the subsidy rate for so-called essential imports seems to have contributed significantly to the curtailment of imports. As shown in Chart 2, the

[8] The theory is sometimes advanced that the disposal of foreign credits in prepayment for exports may constitute another link between the certificate and draft markets. Such prepayments can be either surrendered to the Central Bank for certificates in advance of exports or sold on the draft market. However, an exporter who sells the prepayment for his future shipment of exports on the draft market is obliged to repurchase the same amount of foreign exchange on the draft market when he actually makes the shipment, in order to fulfill the obligation of surrendering the current export proceeds to the Central Bank in exchange for certificates. Therefore, the usual practice is for an exporter who sells spot on the draft market his export prepayments to cover, at the same time, his future obligation with a purchase of futures of the same amount on the draft market. Whether this operation will represent a net gain to the exporters receiving prepayments for future shipments depends upon whether the spot draft rate *minus* the futures draft rate *plus* the futures certificate rate is greater than the spot certificate rate (all exchange rates being expressed in soles per unit of foreign currency). The excess of the spot draft rate over the spot certificate rate by itself is neither a necessary nor a sufficient condition for a profitable arbitrage. By the same token, such arbitrage operations would not necessarily tend to equalize the spot draft rate and the spot certificate rate, except when the futures draft rate is expected to be equal to the futures certificate rate.

CHART 2. MONEY SUPPLY AND IMPORTS OF PERU, MONTHLY, 1949–50



general upward trend of imports (in soles as well as in dollars) from the beginning of 1949 to August of that year is obviously parallel to the steady increase in the money supply. In July 1949, the authorities introduced restrictions on credit expansion by private banks. The expansion of the money supply was immediately arrested, and from September onward imports declined. The reversal of the trend in imports and the decline from August 1949 to February 1950 evidently correspond to the contraction of the money supply. The resumption of the upswing of imports after February 1950 corresponds to the resumption of monetary expansion.[9] There is no doubt, therefore, that the credit restriction after July 1949 was a major contributing factor to the strengthening of the sol after August.

It is also noticeable that, although the average money supply for the first half of 1950 (S/. 1,932 million) was greater than that for the first half of 1949 (S/. 1,896 million), imports for the first half of 1950 were smaller both in soles and in dollars (S/. 965 million and $68.6 million) than the corresponding figures for the first half of 1949 (S/. 1,263 million and $78.3 million). This decline in imports cannot be accounted for by the difference in the average certificate rates of these two periods; the average certificate rate for the first half of 1950 (S/. 14.67 per dollar) was actually considerably lower than that for the same period of 1949 (S/. 17.67 per dollar). It seems likely, therefore, that the abolition of the subsidy rate for the so-called essential imports (implied in the abolition of the official rate) was also an important factor contributing to the reduction of imports and hence to the strengthening of the certificate rate in the months immediately after the exchange revision of November 1949.

The stimulus given to exports by permitting 100 per cent of the proceeds of all exports to be sold in the certificate market and thus abolishing the discriminatory tax on nonmineral exports appears to have been outweighed by the unfavorable trends in the dollar prices of Peru's exports up to the outbreak of the Korean war. Prices in world markets of Peru's five most important export products, cotton, sugar, lead, copper, and petroleum, were lower in the first five months of 1950 than in the corresponding period of 1949. As a result, Peru's dollar export proceeds fell from $57.0 million in the first five months of 1949 to $54.8 million in the corresponding months of 1950. This, of course, should not be interpreted as meaning that the abolition of the implicit export tax had a negative effect on Peru's export proceeds.

[9] A simple correlation between the monthly value of imports in soles and the money supply at the end of the preceding month has been attempted for the period January 1949–December 1950. The correlation coefficient is found to be 0.747.

Stability of Rate to End of 1952

After the initial strengthening, the certificate rate was kept stable at 14.95 soles per dollar from October 1950 to August 1951. Subsequently, it was allowed to fluctuate. While the underlying trend was indeed upward, the rate rose so gently that by the end of 1952 it had not exceeded 15.60 soles. Of course, this remarkable stability was not achieved entirely without government intervention. However, except in 1951 when the Central Bank absorbed in reserves some $9.5 million of foreign exchange, in order to stabilize the rate, the authorities appear not to have intervened persistently in either direction. Neither in 1950 nor in 1952 was there any appreciable net compensatory financing of the balance of payments deficit or surplus by the monetary authorities (Table 1).

However, unlike the initial strengthening, this fairly long period of exchange rate stability cannot be attributed to internal monetary stability. The restrictions on credit expansion by private banks introduced in July 1949 were removed in 1950, and the way was thus opened for credit expansion in the following years. The data in Table 2 indicate the continuing tendency of Peru's economy to be inflationary throughout the period under examination.

In the main, the stability of the certificate rate from 1950 to the end of 1952 was the result of the fortuitous increase in world demand for Peru's main exports generated by the Korean war. According to data published in *International Financial Statistics*,[10] the value of Peru's chief exports in terms of dollars rose substantially from 1949 to 1952 (Table 3). Although export prices declined somewhat from 1951 to 1952, the increase from 1950 to 1952 was sufficient to offset the inflation in the domestic cost of production, and, in conjunction with the slight rise in the certificate rate, to stimulate a 14 per cent expansion in the volume of exports, thus providing the exchange proceeds for the inflated demand for imports.

On the assumption that no very great changes in the volume of exports are required to keep the balance of payments in equilibrium, the sol price of dollars—the certificate rate—could be expected to tend to adapt itself to the changes in the domestic cost of producing a dollar's worth of exports. If, because of the lack of more appropriate indices, the cost of

[10] Weighted arithmetic average of the unit values of 7 items that constitute 90 per cent of Peru's total exports, computed from trade statistics; the weights equal the 1953 relative value of trade. Another series of export prices from a Peruvian source shows the increases in dollar prices of Peru's exports as follows: 1950, 100; 1951, 140; 1952, 114; 1953, 105; 1954, 113. This series, however, is less reliable since it is computed as the unweighted geometric average of the wholesale prices of 15 export commodities in the domestic market, and is not directly derived from trade statistics.

living index is taken to represent the index of the average domestic cost of producing exports, the cost of producing a dollar's worth of exports appears to have risen between 1950 and 1952 by more or less the same percentage as the certificate rate.[11]

TABLE 2. INDICATORS OF INFLATIONARY TENDENCIES IN PERU, 1949–54[1]

	Money Supply[2] (*million soles*)	National Income (*million soles*)	Indices of Wholesale Prices		Index of Cost of Living (*1950 = 100*)
			All goods (*1950 = 100*)	Home goods (*1950 = 100*)	
1949	1,883	9,390	87	81	90
1950	2,198	11,984	100	100	100
1951	2,705	14,506	118	105	110
1952	3,151	16,238	124	107	118
1953	3,478	17,205	125	111	128
1954	3,699	—	138	122	135

[1] Based on data from *International Financial Statistics* (Washington).
[2] Data as of end of year.

TABLE 3. INDICES OF UNIT VALUE AND VOLUME OF EXPORTS OF PERU, 1949–54[1]

(*1950 = 100*)

	1949	1950	1951	1952	1953	1954
Unit value in U.S. dollars	90	100	139	117	93	93
Volume	90	100	100	114	123	127

[1] Based on data from *International Financial Statistics* (Washington).

From the data in Table 4, it is not surprising that the certificate rate rose by only 4 per cent between 1950 and 1952 although the cost of living advanced by 18 per cent. The rise in the certificate rate of foreign exchange was modest because the cost of earning foreign exchange through exports increased only slightly.

[11] The cost of living index is used here because no wage index is available. The cost of living index, however, tends to overestimate the rise in the domestic cost of production for three reasons. First, the index refers only to the cost of living in the capital city of Lima, where prices presumably tend to rise faster than in outlying areas. Second, the wages of miners and agricultural laborers, who are rather unorganized in Peru, tend to lag behind the rise in their cost of living. Third, the index does not allow for the increase in productivity that might be expected from the substantial investments in export industries after the outbreak of the Korean conflict, particularly during the years 1950–53. When these investments came to fruition, the cost of living index would certainly tend to overestimate the cost of production in export industries. Therefore, the estimated indices of the cost of production per dollar's worth of exports are probably more reliable for the last two years (1953 and 1954) shown in Table 4 than for the preceding years.

The extraordinarily favorable prices for Peru's exports *plus* the increase in the volume of exports[12] stimulated by these prices and by the uniform application of the certificate rate to all exports increased Peru's export proceeds from $166.5 million in 1949 to $194.1 million in 1950, $254.3 million in 1951, and $242.4 million in 1952. Attractive world prices for mineral exports also induced large imports of long-term capital on the part of the U.S. direct investment firms, which are the chief producers of Peru's mineral exports. Thus the inflow of direct investment, which was practically down to zero in 1950, expanded to $30.2 million in 1951 and $50.3 million in 1952.

TABLE 4. INDICES OF ESTIMATED COST OF PRODUCING A DOLLAR'S WORTH OF EXPORTS IN PERU, 1951–54[1]

(*1950 = 100*)

	1951	1952	1953	1954
1. Export unit value in U.S. dollars	139	117	93	93
2. Cost of living	110	118	128	135
3. Estimated average cost per dollar's worth of exports (2 ÷ 1)	79	101	138	145
4. Certificate rate				
Yearly average	101	104	115	130
End of year	102	104	133	127

[1] Based on data from *International Financial Statistics* (Washington).

Imports also increased rapidly, the c.i.f. figures (for imports other than gold) as recorded by customs rising from $167 million in 1949 to $176 million in 1950, $262 million in 1951, and $287.5 million in 1952. This increase, save insofar as it was directly associated with investment by foreign mining companies, is attributed chiefly to the expansion of domestic money income.

The demand for imports can be most conveniently analyzed in terms of an expenditure function of the following type:

$$MP_m E = aY + bP_d + cP_m E \qquad (1)$$

Here, M is the physical volume of imports, P_m the price of imports in foreign exchange, E the exchange rate expressed in terms of local currency per unit of foreign exchange, Y aggregate money income of the importing country concerned, and P_d the price of domestically produced and consumed goods.

For the purpose of analyzing the effect of changes in the exchange rate on the demand for imports in terms of foreign exchange, each term in

[12] See Table 3.

equation (1) should be divided by E:

$$MP_m = a\frac{Y}{E} + b\frac{P_d}{E} + cP_m \qquad (2)$$

The movement of Peru's imports in terms of dollars after the unification of the exchange rate at the end of 1949 may then be analyzed in terms of this formula. The relevant information is given in Table 5.

In each year except 1950, there was a considerable inflow of direct investment from the United States to U.S. firms operating in Peru, supplemented by loans granted to these firms by the Export-Import Bank of Washington. The inflow of direct investment took the form primarily of imports of investment goods and materials by the investing firms. Since such imports are not associated with national demand and expenditure in the same way as are other imports, they are best regarded as "exogenous," i.e., independent of Peru's normal domestic demand for imports. A part of the foreign direct investment must have been used to finance the local currency expenditures of the firms' capital formation, but there is no way to separate this part of direct investment from the major part used directly to finance imports of investment goods. In the absence of precise information, it is assumed here that the entire amount of direct investment was used directly to finance imports of investment goods or other goods used in connection with the investment projects, and the entire amount of direct investment and specific loans for development investment is deducted from total imports to obtain the estimates of those imports which may be regarded as generated by the general internal demand for imports.

As shown by Chart 3, the broad movements in the dollar value of imports, adjusted in this way, can be explained to a large extent by changes in the national income in dollars. For 1952, however, imports appear to be far below what would be expected from the level of national income in dollars alone. This deviation may be associated with the fact that inventories of imported goods accumulated in 1951, at a time when fears of war-time scarcity were active, were liquidated in 1952, when these fears had been replaced by the expectation of a decline in world market prices. Actually, the prices of Peru's imports in terms of dollars did turn downward after 1952. The fact that the demand for imports in 1951 and 1952 taken together should have diverged from the "normal" relationship may have something to do with the relative level of domestic and import prices, but this cannot be established in view of the doubtful character of the available price data.

At any rate, the enormous increase in imports (excluding those directly

TABLE 5. FACTORS DETERMINING EXPENDITURES ON IMPORTS OF PERU, 1950-54[1]

	1950	1951	1952	1953	1954
1. National income					
In millions of soles	11,984	14,506	16,238	17,205	18,654[2]
In millions of U.S. dollars (at average certificate rate for year)	807	963	1,053	1,009	963
2. Price index of domestic goods valued in U.S. dollars[3]	100	103	103	97	94
3. Price index of imports valued in U.S. dollars[4]	100	117	119	116	114
4. Item 3 ÷ item 2	100	114	116	120	121
5. Imports c.i.f. (in millions of U.S. dollars)[5]	178	264	301	300	258
6. Foreign direct investment and drawings on Export-Import Bank loans (in millions of U.S. dollars)	—[6]	30	57	49	21
7. Estimate of imports not directly financed by foreign investment (in millions of U.S. dollars)	178	234	244	251	237

[1] Based on data from International Monetary Fund, *Balance of Payments Yearbook* and *International Financial Statistics* (Washington).

[2] Estimated from the annual average money supply by assuming the income velocity of money for 1954 to be the same as for 1953.

[3] Index of home goods prices deflated by the average certificate rate of the year concerned.

[4] A combination of the unit value of U.S. exports to Latin America (supplied by the U.S. Department of Commerce), the over-all export unit value of the United Kingdom, and the over-all export unit value of continental OEEC countries published in Organization for European Economic Cooperation, *Statistical Bulletins, General Statistics* (Paris), weighted according to the value of Peru's imports from these three main sources of supply. The index of import prices published by the Peruvian authorities, which consists of unweighted geometric averages of the domestic wholesale prices of 30 import commodities, when deflated by the relevant certificate rates, would be as follows: 1950, 100; 1951, 116; 1952, 117; 1953, 104; 1954, 101. While this index corresponds closely with the index of import prices adopted for this study up to 1952, the severe drop of 12 per cent from 1951 to 1952 was far in excess of the minor decline shown by the latter. The Peruvian index is believed to be less reliable, since it is unweighted and of rather limited coverage.

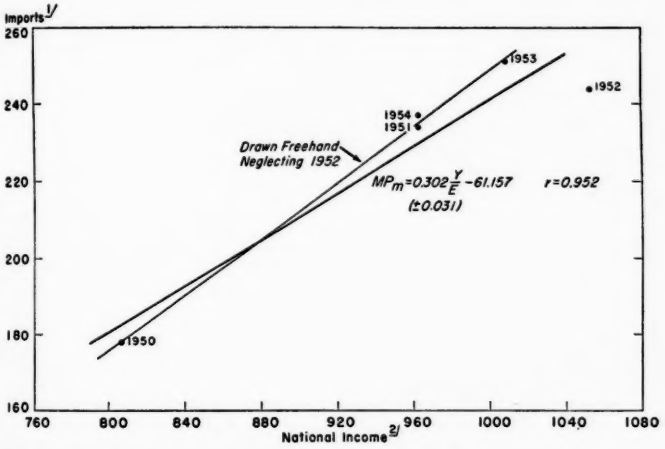
[5] Imports c.i.f. as recorded by customs less gold plus unrecorded trade and government imports. From *International Financial Statistics*, February 1956, p. 230.

[6] According to the *Balance of Payments Yearbook*, there was, instead of a positive direct investment, a net repatriation of foreign direct investment of $8.2 million for the year 1950. There is reason to believe, however, that some direct investment was hidden in the abnormal increase of import collections for that year and that net direct investment might still be positive though not very large for 1950. See footnote 7 in text.

financed by foreign direct investment) in 1951 and 1952, compared with 1950, must be attributed chiefly to the internal expansion of income. Broadly speaking, it was the balance between the increase in export proceeds, resulting from the favorable world demand for Peru's exports, and the increase in demand for imports, owing to internal expansion, that maintained the remarkable exchange rate stability during the first three years of the experiment with fluctuating rates.[13]

CHART 3. NATIONAL INCOME AND IMPORTS OF PERU, ANNUALLY, 1950–54

(In millions of U.S. dollars)



[1] Estimates of imports not directly financed by foreign investment.
[2] At average certificate rate of the year.

Depreciation of the Sol in 1953

The real test of the workability of Peru's flexible rate system under adverse trade conditions came in 1953, when the prices of its chief exports suffered severe setbacks on the world market, while the momentum of internal inflation still continued.

The index of export prices in U.S. dollars dropped by 20 per cent from 1952 to 1953 and by 33 per cent from the boom year 1951 to 1953. On

[13] There was some direct intervention on the part of the Central Reserve Bank in 1951, during which year it added $9.5 million to its reserves when the prices of Peru's exports were particularly favorable.

the other hand, the demand for imports, in terms of dollar value, as a function of the exchange rate shifted upward from 1952 to 1953. As may be seen from Tables 2 and 4, national income in soles rose by 7 per cent, and the price of home goods by 4 per cent, from 1952 to 1953,[14] whereas the price, in dollars, of Peru's imports fell by 3 per cent.

In 1953, therefore, the certificate rate was under pressure from both the demand and the supply side. At first, the monetary authorities showed some reluctance to allow too rapid a rise of the certificate price; this is evidenced by the Central Reserve Bank's net sales of some $12.5 million (exclusive of $10.0 million received under a loan from the International Petroleum Company) during the first half of 1953. The certificate rate was thus prevented from rising rapidly in the first half of the year. From the end of 1952 to the end of June 1953, the certificate rate rose from 15.60 soles per dollar to only 16.13 soles.

During the latter half of 1953, however, the authorities seem to have given up major attempts to intervene and to have resigned themselves to letting the rate find its own level. The net sales of foreign exchange by the Central Bank to the private sector during the second half of the year amounted to no more than a fraction of a million dollars, although government requirements ($4.3 million) continued to be met out of the Central Bank's exchange holdings. In these circumstances, the certificate rate rose rapidly from 16.13 soles at the end of June 1953 to 19.89 soles at the end of December 1953 and 21.63 soles at the end of January 1954.

This significant experience of sharp exchange depreciation should be examined in relation to three important questions: whether speculation in the foreign exchange market tended to be destabilizing; whether the exchange rate depreciation necessary to maintain balance of payments equilibrium in the short run was much in excess of the change that was necessary in the long run; and whether the fluctuation in the exchange rate tended to intensify the instability of internal prices.

Such evidence as is available in regard to the first question indicates that, on the whole, speculative capital movements during 1953 were on balance not destabilizing. This was not because the exclusion of unauthorized capital transactions from the certificate market and the limitation of the validity of the certificates to 15 days or less had rendered the certificate rate immune from the destabilizing influence of speculation; for, as already pointed out above, the draft market, where capital movements are permitted freely, and the certificate market are in fact linked through the possibility of arbitrage operations by foreign investors. Consequently, speculation on the draft market would certainly have repercussions on the certificate market. Moreover, speculation in the form of postponing exports and speeding up imports cannot be prevented

[14] The cost of living rose by 8 per cent from 1952 to 1953.

and certainly can exert considerable pressure on the certificate rate. Finally, an anticipation of impending increases in the certificate rate would make importers less willing to import on credit that would add to their future commitments in foreign exchange and hence would add pressure to the spot certificate market. Nevertheless, in spite of all these possibilities, no evidence has been found of large-scale speculative operations in the direction of destabilization.

From the balance of payments statement in Table 1, it may be seen that private short-term capital exports by Peruvian residents, in the form of net increases in foreign assets held by Peruvian residents through Peruvian banks (item 12) and in dollar balances of Peruvian residents in the United States (item 13), decreased from $14.1 million in 1952 to $5.3 million in 1953, and then recovered to $11.1 million in 1954, despite the fact that in 1954 there was some appreciation and finally a complete stabilization of the exchange rates.

Moreover, the outstanding amount of import credits received from foreign suppliers (item 14 of Table 1) continued to increase in 1953, although the rate of increase was smaller than in 1952 ($3.3 million, compared with $7.9 million). The fact that import credits continued to increase indicated that importers as a whole had not attempted to reduce their future foreign exchange commitments because of the expectation of further depreciation of the sol. On balance, there appears to have been a much smaller net outflow of private short-term capital in 1953, the critical year of exchange depreciation, than in 1952, a year of stability, and in 1954, a year of appreciation and stabilization.[15] Thus there was no evidence of a speculative capital flight generated by the anticipation of, or the actual continuous depreciation of, the sol during 1953.

Nor is there sufficient evidence to justify the belief that imports in 1953 were artificially inflated by speculative anticipation of further depreciation. After making a deduction for imports arising out of foreign direct investment and developmental loans to Peru, the value of imports attributable to domestic demand is estimated to have increased from $244 million in 1952 to $251 million in 1953 (see Table 5).

To judge from the relationship between national income, import expenditures, and the exchange rate shown in Chart 3, this increase of $7 million (about 2 per cent) in imports represented merely a return to the normal relationship between income and imports after the strong downward deviation of 1952. The drawing upon inventories of import

[15] This statement is true even when allowance is made for the errors and omissions in the balance of payments statement by assuming that the net errors and omissions for these three years occurred entirely in the totals of short-term capital transactions and by adding the former to the latter. See Table 1.

goods in the preceding year must have come to an end when the prices of imports (in dollars) had fallen and no further declines were in prospect. Thus, the increase in adjusted import expenditures in dollars, in spite of a decline of national income in dollars, can be accounted for without reference to speculative anticipation of further depreciation. It might be thought that, in the absence of speculation, the import rates should have declined on account of the effect of the depreciation (approximately 10 per cent on the average between 1952 and 1953) upon the relative prices of imports. This effect, however, was probably insignificant, since the depreciation was offset to a very large extent by a rise in home prices (4 per cent in wholesale prices and 8 per cent in retail) and a decline in dollar prices of imports (3 per cent) (see Tables 2 and 5).

The absence of large-scale destabilizing speculation on the exchange market might be attributed in part to the restraint on credit expansion applied by the Peruvian authorities soon after the exchange market showed signs of weakness. On April 20, 1953, the Government imposed supplementary reserve requirements of 50 per cent on new demand deposits and 25 per cent on new time deposits of all commercial banks. This measure almost completely arrested the rapid expansion of bank credit that had been taking place in the first four months of that year. Subsequently, on November 16, 1953, the basic reserve requirement for commercial banks on demand deposits as of April 20, 1953 was raised from 20 per cent to 22 per cent, and that on time deposits was increased from 10 per cent to 11 per cent. This had the effect of mopping up, to a large extent, excess reserves in commercial banks. As a result, although the domestic loans and investments of commercial banks increased by 427 million soles during 1953 as a whole, only 64 million soles of the increase occurred after April of that year. The market rate of interest as represented by the government bond yield rose from a monthly average of 7.50 per cent in December 1952 to 8.16 per cent in April, 8.82 per cent in December 1953, and 9.02 per cent in January and February 1954.[16] The extent to which the restraints on credit expansion and the consequent rises in interest rates affected the cost calculations of speculators in foreign exchange and hence the international flow of short-term capital is hard to assess. But the timely restraints on credit must certainly have tended to strengthen confidence in the sol, and hence to encourage speculation in a stabilizing direction.

The second question is more difficult to answer conclusively on the basis of the available statistics, although, *a priori*, the short period

[16] Afterward, it gradually declined to 7.5 per cent toward the end of 1954. The bond yield, however, represents only the long-term rate. How far the short-term rate in the free money market changed over the period concerned cannot be ascertained statistically. The discount rate of the Central Reserve Bank for commercial paper, however, has remained unchanged at 6 per cent since November 1947.

change in the exchange rate would clearly have to be greater than the ultimate change required. In any case, this question cannot be answered until the stabilization of the rate in 1954 is studied. For the time being, it may be noted that the rise in the certificate dollar rate brought about by free market forces during the second half of 1953 was smaller than the rough estimate of the increase in the average cost of earning dollar exchange through exports. According to Table 4, the decline in export prices in foreign markets combined with the increase in domestic cost would, on the assumption of no improvement in productivity, probably have raised the average cost of producing a dollar's worth of exports by some 37 per cent from 1952 to 1953. The certificate rate at the end of 1953, on the other hand, was only 28 per cent higher than at the end of 1952.[17] No doubt, productivity in export industries must have increased somewhat from 1952 to 1953 with the completion of some of the investment projects in mining and agriculture. Even when due allowance is made for the increase in productivity, however, the certificate rate does not seem, up to the end of 1953 at least, to have been pushed up much in excess of the cost of earning dollars through producing for export.

An examination of the third question must also be deferred until the stabilization of 1954 is studied.

Stabilization in 1954

The certificate rate continued to rise rapidly during January 1954, and by the end of the month it was 9 per cent higher than at the end of 1953. This sharp rise coincided with an even more abrupt seasonal decline in export proceeds, which dropped by 19 per cent, from US$19.2 million in December 1953 to US$15.6 million in January 1954. In the face of such an abrupt drop of exchange proceeds, the 9 per cent rise (or even a much greater rise) of the certificate rate could easily have been engendered merely by the reluctance of private speculators to supplement out of their own holdings the temporary deficiency of supply in the exchange market, as the elasticity of demand for imports in the very short run is likely to be quite small.

The authorities appear to have done little, if anything, to tide over the temporary shortage of foreign exchange in January. In February, however, the President of Peru announced a stabilization program which

[17] The annual average certificate rate in 1953 was only 11 per cent higher than that in 1952. However, since in 1953 the certificate rate was permitted to rise freely only in the second half of the year, a comparison of the annual average rate in 1953 with that in the preceding year would grossly understate the forces making for the rise of the exchange rate during that year.

included *inter alia* (1) the reduction of government expenditures to the level of current receipts, particularly by slowing down public works, (2) the checking of bank credit expansion, and (3) more active regulatory intervention by the Central Bank in the exchange market, using, if necessary, a newly acquired $30 million stabilization credit, for the purpose of keeping the rate stable in the short run while continuing to allow it to be determined by long-run market forces. This credit was available in terms of stand-by arrangements made with the International Monetary Fund ($12.5 million), the U.S. Treasury ($12.5 million), and a private New York bank ($5 million). The President's announcement brought about an almost immediate improvement in the certificate market. The certificate rate declined from 21.63 soles per dollar at the end of January to 18.73 soles at the end of February. The rate then fluctuated between the levels reached during November and December 1953, until October 1954 when things had so improved that the Central Bank had to intervene by buying surplus supplies of dollars in order to stabilize the rate at 19.00 soles for the rest of the year.

The immediate strengthening of the certificate rate at the end of February was no doubt due mainly to the confidence inspired by the stabilization program and the $30 million stabilization credit and the general belief that the Government would not hesitate to use the credit to force down the rate if it was considered too high. Confidence encouraged speculators to supply the temporary excess demand for foreign exchange without asking for too great a risk premium; the sol was thus strengthened at once, although the seasonal dip in export proceeds was not over until April.

This psychological stimulus to confidence, however, cannot be regarded as the cause of the lasting improvement in the balance of payments and of the certificate rate in the year 1954 as a whole. The major component in the improvement in Peru's over-all balance of payments in 1954 was the trade balance, which changed from a deficit (f.o.b.) of $25 million in 1953 to a surplus of $37 million in 1954 (Table 1). The balance of private short-term capital movements, which were most susceptible to speculative and psychological influences, actually deteriorated considerably during 1954 compared with 1953. As already pointed out, the amount of private short-term capital outflow in 1954 (in the form of increases in foreign assets held through Peruvian banks and in dollar balances of Peruvian residents in the United States), at $11.1 million, was more than double the outflow of $5.3 million in 1953.

Thus the eventual stabilization of the sol in 1954 must have been due to improvements in the basic conditions of imports and exports. The internal stabilization policy, however, could hardly make any appreciable contribution to the improvement of the trade balance and to the

stability of the sol until late in the second half of the year. Although it was announced in the stabilization program that the Government would attempt to balance the budget and check the expansion of bank credit, neither of these aims was achieved in 1954. The net increases in aggregate bank credit to the private sector and to the development banks were larger both in the first half and in the second half of 1954 (S/. 368 million and S/. 100 million, respectively) than in the corresponding periods of 1953 (S/. 355 million and S/. 83 million, respectively).[18]

Moreover, although the total deficit of the government budget was smaller in 1954 than in 1953 (S/. 148.8 million, against S/. 294.6 million), the part of the deficit that was financed in an inflationary way was actually larger. Of the 1953 deficit, 159.6 million soles was financed by a $10 million loan from the International Petroleum Company, which enabled the Central Reserve Bank to sell that much more foreign exchange to the public and to absorb the corresponding amount of soles into the Bank from the private sector. Another 121 million soles was financed by the issue of Road Bonds and Public Work Bonds, which, to the extent they were taken up by commercial banks,[19] are not as inflationary as the treasury paper discounted with the Central Bank with which the rest of the deficit was financed. In contrast, practically all of the government deficit in 1954, i.e., 131.5 million soles out of 148.8 million, was financed by treasury paper discounted with the Central Bank and other banks. Thus during 1954 as a whole, the money supply expanded further by 221 million soles, or by more than 6 per cent. It was not until August 1954 that the money supply finally leveled off.

In spite of the continued expansion of bank credit and the money supply, there was a remarkable improvement in the trade balance. This was the combined result of a decrease in imports (f.o.b.) of $34.6 million[20] and an increase in exports (f.o.b.) of $27.3 million. A great part of the decrease in imports, however, was a direct consequence of the decline in direct investment by foreign companies and in the utilization of specific foreign loans for development ($21.3 million in 1954 against $48.8 million in 1953). On the assumption, as above, that the whole amount of direct investment and specific development loans was used to finance imports of investment goods and materials used in connection with the investment projects concerned, the decrease between 1953 and 1954 in imports not directly financed by foreign investments may be put at somewhere

[18] The decrease in bank credit to the private sector during the second half of 1954 was more than offset by the increase in credit to the development banks. This shift in the composition of bank credit was due mainly to the transfer of the financing of the current rice crop from the commercial banks to the semiofficial agricultural bank, which was one item in the stabilization program.

[19] None of these bonds seem to have been bought by the public.

[20] Imports c.i.f. decreased by $42 million from 1953 to 1954.

around $14 million c.i.f. (Table 5). Detailed statistics of recorded trade show that from 1953 to 1954 imports of capital goods declined the most, viz., by $28 million, or 30 per cent, which was very close to the $27.5 million decrease in direct investment and the utilization of specific loans.[21] Imports of industrial materials and fuels declined by $3 million, or 3.8 per cent, while imports of consumer goods declined by $12 million, or 14 per cent.[22] It would not be far wrong, therefore, to estimate at somewhere around $14 million the decrease in 1954 in imports not directly induced by the decrease in foreign investment.

A re-examination of Table 5 and Chart 3 indicates that this internally induced decrease in imports in 1954, which took place in spite of an increase of 221 million soles in the money supply, is to be attributed chiefly to the depreciation of the sol in the latter months of 1953. Since the depreciation took place chiefly in those months, the average certificate rate for 1954 (expressed in soles per dollar) was 13 per cent higher than in 1953, even though in 1954 there was some strengthening of the sol.

One notable fact about the 1953–54 depreciation, however, is that the effect of the 13 per cent depreciation upon the relative prices of imported goods was almost completely obliterated by a 2 per cent decline in the dollar prices of imports in supplying countries and by a 10 per cent rise in the prices of home goods in the domestic market (see Tables 2 and 5). The influence of the depreciation seems to have operated chiefly through the relationship between income and import-expenditure. That is to say, insofar as the expenditure on imports is a function of national income, a depreciation of the exchange rate in excess of the percentage increase in national income would tend to reduce expenditure on imports in terms of foreign exchange, even if the depreciation should bring no significant change in relative prices of imports and home products. Thus, as may be observed from Chart 3, the estimated $14 million decline in imports (excluding those directly financed by capital imports) appears to have been accounted for largely by the depreciation in excess of the percentage increase in national income (i.e., by the decrease in national income in terms of dollars at the current depreciated rate of exchange).

It is not easy to gauge the precise relative importance of various possible causes of the increase of $27.3 million (or 12 per cent) in Peru's export proceeds in 1954. There was hardly any change in the average

[21] This category of imports, however, included the subgroup, "Vehicles and Transport Equipment," which in turn included automobiles, the import of which was prohibited from November 1953 to August 1954. It is not known how much of the decrease in this category of imports was due to the prohibition of imports of automobiles in the first seven months of 1954.

[22] *Boletín del Banco Central de Reserva del Peru* (Lima), March 1954 and March 1955.

dollar prices of Peru's exports in 1954, compared with 1953.[23] With more or less unchanged export prices in world markets, the 13 per cent depreciation of the sol between 1953 and 1954 would certainly increase the profit incentive for exports, for the rises in domestic prices and costs were insufficient to offset such a depreciation. The cost of living increased by 5 per cent, and the wholesale prices of domestic goods by 10 per cent.

It is impossible, however, to separate the effect of the increased current profit incentive from that of the large capital expansion arising out of the Korean boom, which must to a large extent have reached the stage of fructification by 1954. As may be seen in Tables 1 and 5, foreign direct investment and the utilization of specific loans for capital expansion totaled $135.8 million over the three years 1951–53. Such heavy investment outlays would no doubt have considerably increased the production and refining capacity of Peru's mining industry, which accounted for one third of total exports in 1954.

One extreme example is the newly developed iron mines, which in 1953 produced and exported only 553,000 tons of ore, exported 1,169,000 tons in 1954, and toward the end of that year reached a monthly rate of production of 200,000 tons. Similarly, the more than 7 per cent increase in the volume of petroleum exports in 1954 was probably due mainly to the intensive drilling and prospecting undertaken in the preceding years by a number of foreign and Peruvian companies in the coastal and eastern parts of the country. In agriculture, investment in irrigation and increases in cultivated area under the government development program had also brought about increases in such export crops as cotton, sugar, and rice. Thus, the increase in the dollar value of export proceeds in 1954 must be regarded as the combined result of the increase in productivity brought about by capital expansion in the preceding years and the additional incentive provided by the depreciation.

The quick recovery of the sol, accompanied by the remarkable movement in the trade balance during 1954 without any apparent improvement in Peru's export markets, seems to indicate that up to January 1954 depreciation had gone further than was required for long-run trade equilibrium, after the depreciation had had time to work out its full effects on exports and imports and the increased productive capacity of export industries that was to be expected from past capital expansion had actually taken place.

This, however, does not mean that the depreciation in 1953 was intensified by exchange speculation of a destabilizing type. On the contrary, as pointed out above, the sharp decrease of 62 per cent in the

[23] See Table 3. According to the Peruvian export price index, however, average export prices increased by more than 7 per cent between 1953 and 1954. This discrepancy is explained in footnote 10.

outflow of private short-term capital between 1952, a year of exchange stability, and 1953, the year of depreciation,[24] was probably a result of the normal outflow of short-term capital being partially offset by speculation of a stabilizing sort, i.e., by speculative sales of foreign exchange by those who believed that the depreciation might have proceeded too far. The fact that in 1954, the year of recovery and stabilization of the sol, the outflow of private short-term capital recovered its former strength and rose to more than double that of the preceding year seems to indicate the cessation of speculative sales of foreign exchange and possibly some repurchases by speculators when the expected recovery of the sol was realized. Such behavior of private short-term capital does not conform to the widespread belief, derived from interwar experience, that private short-term capital movements tend to be dangerously destabilizing under any flexible exchange system.

Effect of Fluctuations in the Exchange Rate on the Domestic Income and Price Level

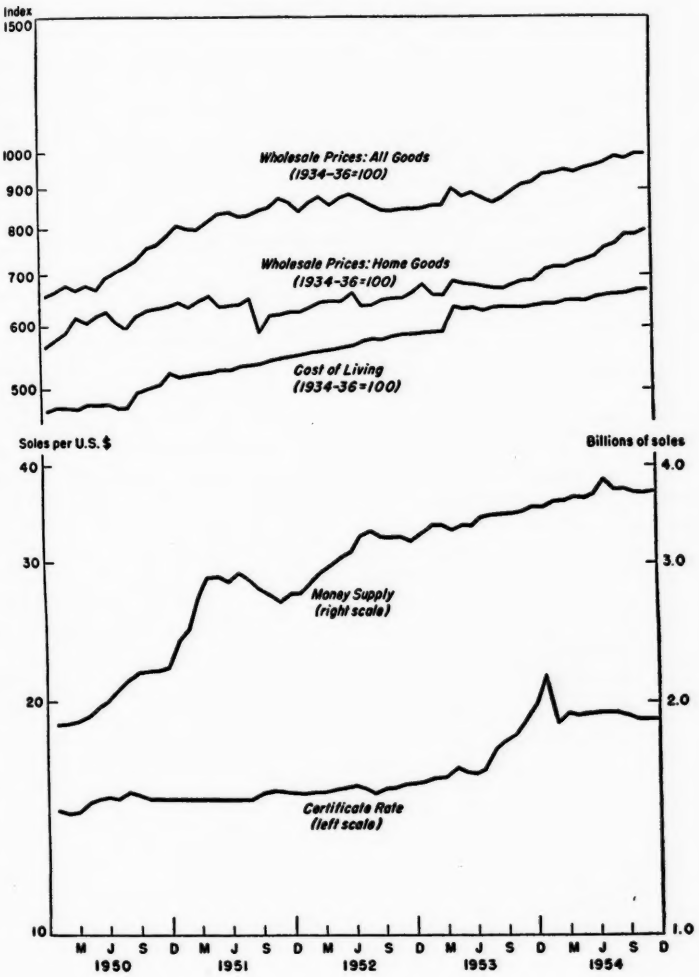
Finally, the effects of fluctuations in the exchange rate of the sol upon domestic income and prices in Peru should be examined. What would the outcome have been had the certificate rate in 1953 been pegged at the level prevailing at the beginning of that year, in the face of severe declines in export prices abroad and continued inflationary tendencies at home? One thing that is certain is that Peru's exports in 1953 would have been smaller both in quantity and in value. If the same degree of import freedom had been permitted under the pegged rate as under the flexible certificate system, there would certainly have been a far larger deficit in the trade balance. As long as Peru was willing to let the foreign exchange reserve be depleted rapidly, this trade deficit would no doubt have been a major deflationary force and a stabilizing influence on domestic prices. This, however, could not have continued long; for with a foreign exchange reserve[25] of only about one sixth of the annual value of imports at the end of 1952, the exchange authorities would certainly not have ventured to use their reserve without limit to peg the exchange rate. Most probably, they would not have drawn upon the foreign exchange reserve to a significantly greater extent than they actually did

[24] The net increase in foreign assets held by Peruvian residents through Peruvian banks plus the net increase in dollar balances of Peruvian residents in the United States was $14.1 million in 1952, $5.3 million in 1953, and $11.4 million in 1954.

[25] Including the so-called "untouchable gold reserve." The foreign exchange and gold reserve of the Central Reserve Bank at the end of 1952 amounted to US$55.7 million, of which US$18.4 million in gold was considered "untouchable."

CHART 4. DOMESTIC PRICE INDICES, MONEY SUPPLY, AND CERTIFICATE RATE OF PERU, MONTHLY, 1950–54

(Logarithmic vertical scale)



under the flexible rate system, but would have restricted imports by quota to the available export proceeds and net capital inflow. If this was the most likely course of action under a pegged rate of exchange, then as far as the effect upon aggregate effective demand and money supply is concerned, it would have made little difference whether the exchange rate was pegged or left flexible. The higher income of the export industries resulting from automatic depreciation under the flexible rate, compared with the fixed rate alternative, would be offset exactly by the smaller expenditure of the public on import-competing goods—made possible by the economy's greater importing power—*plus* the absence of the abnormal profits which importers would have made under an artificially pegged rate of exchange.

Moreover, since the quantity of imports under a controlled fixed rate would probably have been smaller than under the flexible rate, and since it is unlikely that effective price control could have been enforced through rationing imports to final consumers, the prices of imports in the domestic market would have been higher than under the flexible rate system.

While, if the exchange rate had been kept stable in 1953, the prices of export goods in Peru would have been somewhat lower than they actually were, there is no reason to believe that the cost of living as a whole would have been any lower than it actually was. Therefore, the argument that a depreciation of the exchange rate necessarily means a rise in the cost of living and that this, in turn, will give rise to a demand for wage increases, setting off a vicious cycle of increases in wages and prices, does not apply to Peru in 1953.

These conclusions appear to be at least partially borne out by the statistics shown in Chart 4, from which it may be observed that the indices of wholesale prices of all goods, wholesale prices of home goods, and the cost of living show little if any correlation with the certificate rate. Even the sharp depreciation of 1953 and the abrupt improvement in the early months of 1954 had hardly any tangible direct effects upon these indices.

The Cost of a Foreign Exchange Standard or of the Use of a Foreign Currency as the Circulating Medium

Eugene A. Birnbaum*

ALTHOUGH THE NUMBER is diminishing, various independent countries and colonial areas still have no monetary authority with discretionary power over currency circulation, but use either a foreign currency or a foreign exchange standard, i.e., a local currency with a mandatory 100 per cent foreign exchange cover. The characteristics and some of the possible advantages and disadvantages of these "automatic" currency systems are briefly described in this paper. However, the paper deals primarily with the economic cost of employing foreign assets as the circulating medium or as a mandatory cover for the currency. This cost is genuine, but in assessing its magnitude, account should be taken of the fact that countries having independent currency systems must also maintain foreign exchange reserves. The net cost of the automatic systems, therefore, relates only to the extra amount of foreign assets that is immobilized; in most instances, this net cost appears to be small.

Nature and Operation of Automatic Currency Systems

The term "automatic" as used in this paper describes a monetary system in which there is no monetary authority with discretionary power to issue and retire currency. In such a system, the domestic circulation of notes and coin is subject to the same automatic forces as under a gold coin or gold certificate standard, i.e., the currency in circulation is primarily a resultant of movements in the balance of payments. Two basic types of automatic system are now in operation. One type is that which employs a foreign currency as the circulating medium, e.g., the U.S. dollar in Panama and Liberia. Panama has no national currency of any significance,[1] and the U.S. dollar, which enjoys full legal

* Mr. Birnbaum, economist in the Finance Division, was educated at Ohio State University and the George Washington University. As a member of the Fund's Statistics Division, he was formerly responsible for the statistics on government finance published in *International Financial Statistics*.

[1] Of a total of 3.1 million balboas of coins minted up to the end of 1953, 1.4 million were held by banks (*International Financial Statistics*, Washington, April 1956, p. 172).

tender privileges, is used for local purposes. Liberia employs the U.S. dollar as legal tender, predominantly in the form of silver dollars and subsidiary coins. The second type is that which involves a 100 per cent mandatory foreign exchange cover for a locally issued currency, e.g., the sterling exchange standard system (or currency board system) which exists in various British colonial areas.[2] Jordan, an independent country since 1946, also operates under a sterling exchange standard; the Jordanian Currency Board was established in 1949 with its head office in London.

Under the sterling exchange standard, a currency board is empowered to issue a local currency, but the board is denied any discretionary power to direct or to manage the currency issue. Local currency is issued and redeemed by the board in exchange for sterling at a fixed rate. This is done only in response to the initiative of the second party to the transaction, usually a commercial bank; hence, this function of the board can be characterized as that of a money-changer. For this service the board charges a commission, usually ¼ to ½ per cent, which is applicable to transactions in either direction, i.e., it is applied equally to exchanges of either sterling or local currency.[3]

The most important difference between the Panamanian type of currency system and the (sterling) exchange standard system is that under the latter the authorities acquire foreign exchange and are able

[2] For a discussion of the origins and evolution of the sterling exchange standard, and a synposis of U.K. colonial currencies, see H. A. Shannon, "Evolution of the Colonial Sterling Exchange Standard," *Staff Papers*, Vol. I (1950–51), pp. 334–54, and "The Modern Colonial Sterling Exchange Standard," *Staff Papers*, Vol. II (1951–52), pp. 318–62.

The *Memorandum on the Sterling Assets of the British Colonies* (Colonial No. 298, London, 1953, p. 3) indicates that the only exception to the rule of a mandatory 100 per cent foreign exchange cover for local currency was Southern Rhodesia, which could invest up to 10 per cent in Southern Rhodesian securities, 7 per cent in Northern Rhodesian securities, and 3 per cent in Nyasaland securities. Up to 1953, the currency authority had made use of this authorization only for the purchase of Southern Rhodesian securities. However, in December 1954 the U.K. Secretary of State for the Colonies stated that he had recently advised the colonial governments that "subject to a review of the individual circumstances of each territory, I would agree in principle to the investment of a small part of the cover for Colonial currencies in locally issued securities. The currencies would still be fully backed and automatically redeemable for sterling. It is not the intention to go beyond this." (See House of Commons, *Weekly Hansard*, London, December 15, 1954, "Written Answers to Questions," column 143.) At the time of writing this paper, no colonial government had been reported as having begun to implement this modification of policy by purchasing local securities. According to the *Economist* (London, August 11, 1956, p. 508), "there is no means of knowing how far there has yet been a shift from sterling to local currency assets. The movement has probably not gone far."

[3] This practice is described by Ida Greaves as an "anachronism" giving rise to frictions in the operation of the banking system (Ida Greaves, *Colonial Monetary Conditions*, Colonial Research Studies No. 10, London, 1953, pp. 59 and 86).

to invest in sterling securities and earn the prevailing rate of return;[4] such interest earnings are entirely foregone under the Panamanian system.

There are undoubtedly important advantages in maintaining automatic currency systems in some areas. In certain small dependent territories, the difficulty of setting up and managing an independent monetary system is avoided through this arrangement. Use of a widely acceptable currency is an important advantage in tourist and border trade in Panama, and perhaps elsewhere; and the exchange stability of the local currency under the currency board system is, of course, advantageous for international trade and investment.

The limitations that an automatic currency system imposes on the governmental authorities may be considered either an advantage or a disadvantage. On the one hand, the lack of discretionary power to expand the currency issue restricts the capacity of the government to finance its expenditures in an inflationary way. The expedients of printing money or of borrowing from a bank of issue are not available, and, in the absence of a central bank, possibilities of borrowing from commercial banks are likely to be limited. Even if the government finds it possible to finance a relatively large deficit by borrowing from local commercial banks, the inflationary consequences are limited since the increase in the domestic money supply will tend to be checked, automatically, by balance of payments forces, i.e., through increased imports or other debit items, which will result nearly concurrently in a net outflow of currency (or a reduced net inflow of currency). Since inflationary tendencies resulting in part from government deficits are a chronic problem in many underdeveloped countries, an automatic currency system is regarded by many observers as a useful safeguard. A similar argument, of course, can be advanced in favor of the gold standard.

On the other hand, an automatic currency system may be considered disadvantageous because it prevents the authorities from applying effective monetary measures to reduce the severity of swings in the business cycle. Again, the system is subject to the same forces as the gold standard. A balance of payments surplus introduces additional currency into circulation, and a payments deficit drains away currency. Since currency serves not only as hand-to-hand money but also as commercial bank reserves, the change in deposits and in total money supply is likely to be greater than a balance of payments surplus or deficit. As the authori-

[4] In general, the currency board authorities are required to accumulate the income from their investments until they amount to 110 per cent of the local currency circulation; net income beyond this point is paid to their governments as a component of the general revenue (Ida Greaves, *The Colonial Sterling Balances*, Princeton University, Essays in International Finance No. 20, September 1954, p. 11).

ties cannot take compensatory action of a monetary character, an automatic currency economy is, to this extent, more responsive than other economies to the forces of inflation and deflation arising from the balance of payments position. The automatic relationship between the money supply and the balance of payments may render the monetary system incapable of expansion and contraction in response to seasonal financial demands. And the system may be unable to expand with economic growth except through the accumulation of export surpluses. Cyclical fluctuations may, of course, be damped to some extent through the use of the foreign exchange reserves of private banks (or through foreign loans). Also, governments may be able to apply a limited type of countercyclical fiscal policy, e.g., during an export boom, by budgeting for government surpluses and accumulating foreign exchange holdings through the levy of export duties or through the operations of a marketing board, and by drawing down government-held balances during a depression. However, the authorities of an automatic currency economy are powerless to take effective countercyclical monetary measures.[5]

Another possible disadvantage of the automatic currency system is that the absence of a central bank acting as a lender of last resort may require the banking system to hold larger cash reserves (inclusive of central bank reserves) than would be needed under a discretionary system, and may expose individual banks to the risk of insolvency.[6] This may induce a conservative policy on the part of the banks and prevent them from playing as active a role in the financing of investment as would be possible under a different monetary system.

Economic Costs of Automatic Currency Systems

Under an automatic currency system, as under the gold standard, the economy must bear a real cost for obtaining its currency. The gross cost is represented by a cumulative export surplus (or, more precisely, the cumulative total of net credit entries in the balance of payments).[7]

[5] For an analysis of the West African currency board system, see United Africa Company Limited, *Statistical and Economic Review* (London), September 1955, pp. 1–21.

[6] The effect of the absence of a central bank on the credit policies of local branches of foreign-owned banks would, of course, depend on the extent to which local branches have access to the cash resources of the head office. Also, the accessibility of the foreign loan market to locally owned commercial banks might be an important factor in some cases.

[7] See, for example, J. Mars' discussion of the "sacrifice of exported goods and services" to the extent that the currency circulation of Nigeria increases, in *Mining, Commerce, and Finance in Nigeria* (London, 1948), p. 190.

Under the currency board system an offset against this cost is the interest earned on the foreign securities which form the currency cover. But in a poor and underdeveloped area, the return on this mandatory external investment (capital export) may be considerably less than the value to the community of additional imports.

In estimating the real cost of an automatic currency system, the capacity of the economy to absorb the additional resources which the release of the excess foreign exchange could provide has been questioned by some observers. This reservation applies chiefly to the use of accumulated foreign assets for capital goods imports, for which there is a limit to the rate of efficient absorption; the underdeveloped areas, however, could easily use more imported consumer goods. Even as regards capital goods, any limit on absorptive capacity is likely to become more remote with the progress of development. It has also been argued that, in the British colonies, government projects are not impeded by the requirement that sterling assets be used as currency cover since colonies needing sterling can borrow in London.[8] This argument, however, appears to overstate the ease of borrowing, especially under conditions of monetary stringency in London,[9] and it neglects the interest cost.

To obtain some idea of the difference between the cost of employing an automatic currency system and the cost of employing a discretionary monetary system, data on central banks' total holdings of foreign assets may be compared with their total currency issues. To the extent that the observed ratios of foreign assets to currency issues in countries with discretionary systems are less than 100 per cent, these countries have been able to use external receipts which would have been immobilized under an automatic system.[10] It should be noted that central banks ordinarily hold the whole of the official foreign reserves of the country, and that some of the reserves are commonly held not only as currency cover but also as cover for various deposit liabilities. In some countries, minimum holdings of foreign reserves against both currency and deposit liabilities are specified by law. On the other hand, the foreign asset

[8] See, for example, Frank H.H. King, "Sterling Balances and the Colonial Monetary Systems," *The Economic Journal* (London), Vol. LXV (1955), p. 720.

[9] The communiqué issued by the Commonwealth Finance Ministers, after their meeting in Sydney in January 1954, stated that "Commonwealth Governments may now approach the London market after consultation with the U.K. Government. . . .In view of the many claims upon this market. . .access has to be limited. . . .It is also necessary in the general interest for the timing of any such borrowing to be carefully regulated." Press reports during 1955 indicated difficulties in borrowing on the London market. In November, for example, the underwriters had to take up 86 per cent of their commitments on a £10 million loan floated in London by the Government of the Federation of Rhodesia and Nyasaland.

[10] The fact that currency boards ordinarily accumulate foreign exchange until the holdings amount to 110 per cent of the currency is neglected in the subsequent discussion.

reserves held by currency boards, under a 100 per cent exchange standard, in most cases probably constitute the greater part, if not the whole, of official foreign exchange reserves of the country or colony.[11] The legal requirement of a one-to-one correspondence between foreign assets and the currency issue under the currency board system should not obscure the fact that these assets also serve as international reserves. The requirement means that the accumulation or decumulation of foreign reserves involves exactly equal increases or decreases in the domestic currency issue (and also, perhaps, changes in deposit money). Under a discretionary system, the accumulation or decumulation of foreign reserves also tends to increase or decrease the money supply, but the monetary effects can be wholly or partly counteracted by central banking operations.

Table 1 shows for 20 countries the central bank holdings of total foreign assets expressed as a percentage of gross[12] currency liabilities. The findings give a rough indication of the amount of resources that might be released through the adoption of a discretionary system in similarly situated countries now having automatic currency systems.[13] The countries selected are relatively underdeveloped countries for which the necessary data were easily obtainable from the Fund publication, *International Financial Statistics*. The countries are arranged in ascending order of the proportion of central bank holdings of foreign assets to the national currency liability (determined on the basis of the average of end-of-year ratios over the period covered by the available data—i.e., for most countries an eight-year period beginning 1948).

The countries are divided into three groups. The first contains countries which, during the period under observation, have not maintained as a general practice a high proportion of foreign assets relative to currency. For each country in this group, the proportion averaged a maximum of 60 per cent during the period covered; the proportion has fluctuated widely, however, and in recent years the ratios for Costa Rica and Nicaragua have increased significantly. Also, the ratio for Mexico shows a phenomenal increase in 1955: by the end of 1955, foreign asset holdings slightly exceeded the currency liability, whereas the average of assets to currency during the preceding seven years amounted to only 54 per cent.

For the second group of countries, the average proportion of foreign

[11] The marketing boards and other government agencies of certain British colonies, however, also hold relatively large foreign exchange reserves.

[12] That is, including currency held by the banking system, since under an automatic system such holdings also immobilize foreign assets.

[13] Theoretically, a comparison of foreign assets held under the automatic and discretionary systems should cover the total official holdings of foreign assets under both systems. However, official reserves held outside central banks (e.g., treasury holdings) have been neglected in the calculations. The amounts involved by the omission of other official holdings probably are relatively small.

COUNTRIES, 1948–55[1]

(Data as of end of period)

Country	Average of End-of-Year Data	1948	1949	1950	1951	1952	1953				1954				1955			
							I	II	III	IV	I	II	III	IV	I	II	III	IV
Group I																		
Brazil	37	71	61	44	30	28	27	28	31	27	25	20	19	17	16	16	16	15
Bolivia	38	56	42	55	72	30	21	63	47	37	26	20	14	10	4	1	1	3
Costa Rica	42	26	24	19	40	57	81	91	78	61	79	73	49	50	76	96	82	61
Colombia	46	42	43	41	45	48	61	60	59	52	61	69	58	62	38	40	40	33
Turkey	49	57	64	62	54	43	49	48	42	43	42	45	40	39	38	36	30	29
Nicaragua	52	31	28	28	62	85	114	154	128	69	102	127	92	46	65	92	111	69
Mexico	60	17	43	82	60	56	63	53	48	67	44	30	39	52	70	78	99	100
Median	46																	
Group II																		
Philippines	69	91	74	81	72	70	73	75	74	68	68	72	61	58	54	55	56	43
India	72	84	76	76	73	70	70	68	72	71	69	70	70	67	63	60	62	60
Pakistan[2]	74	152	95	82	83	44	42	43	44	41	44	40	40	41	40	41	58	58
Dominican Republic	84	88	75	83	100	91	88	88	85	76	97	100	100	86	78	76	76	72
Guatemala	87	...	95	90	95	90	108	111	83	73	90	76	69	68	89	108	96	98
Thailand	94	89	105	109	109	108	99	97	95	85	78	73	71	70	111	115	83	81
Ecuador	95	100	91	110	94	114	120	103	94	97	93	86	81	83	89	75	79	76
Median	84																	
Group III																		
Honduras	110	51	85	139	149	128	119	137	135	121	108	119	110	106	97	109	117	102
El Salvador	111	119	133	131	120	108	152	159	141	106	139	142	116	99	133	149	122	92
Cuba	112	...	...	118	122	102	104	118	120	112	118	122	118	104	111	118	123	111
Venezuela	119	123	131	119	111	115	107	123	127	120	117	135	126	111	115	133	131	117
Ceylon	124	108	109	154	160	103	92	76	79	67	95	125	124	139	149	160	156	154
Burma	139	101	121	150	182	221	163	189	190	191	130	135	108	94	67	58	53	55
Median	116																	

[1] Based on data from *International Financial Statistics* (Washington). Except for India and Pakistan, the data for foreign assets are the domestic currency valuations entered in the balance sheets of central banks, as published in *IFS*. For India and Pakistan, the central bank rupee valuations of gold do not correspond to the rupee valuations of foreign exchange; therefore, the foreign assets data used are the *IFS* data on foreign assets expressed in U.S. dollars, converted to rupees at par. Gross currency liabilities include currency held by the banking system.

[2] See text footnote 14.

assets to national currency has ranged from 69 per cent to 95 per cent. Most of the countries in this group, unlike those in the first group, appear to have maintained a relatively stable relation between their foreign asset holdings and their domestic currency liabilities. Some of the variation in the Pakistan data can be attributed to valuation phenomena. In 1949, the Pakistan rupee was not devalued with sterling and the Indian rupee; therefore, in terms of Pakistan rupees, holdings of sterling and Indian rupees declined to the extent of the devaluation of these currencies. In August 1955, however, the Pakistan rupee was devalued and restored to the pre-1949 relationship with sterling and the Indian rupee; this devaluation immediately raised the Pakistan rupee valuation of total holdings of gold and foreign exchange. Hence, the foreign asset-currency ratio for Pakistan declined as a result of the 1949 devaluation of sterling and the Indian rupee, and increased as a result of the 1955 devaluation of the Pakistan rupee.[14] One of the countries in the second group, the Philippines, operated under a dollar exchange standard until the establishment of the Central Bank of the Philippines on January 1, 1949. The data indicate that Philippine foreign assets have recently been allowed to decline to less than 60 per cent of the currency circulation.

The third group includes countries which do not seem to have made much use of their ability to issue a currency without foreign asset coverage. Two of them, Ceylon and Burma, maintained a currency board monetary system until recent years. Although a central bank was established in Ceylon in August 1950, the practice of maintaining a high foreign asset reserve relative to the national currency has continued, except for a period in 1953 and 1954. In Burma, where the assets and liabilities of the currency board were transferred to the Union Bank in July 1952, the foreign asset coverage has been below 100 per cent since the last quarter of 1954.[15] Cuba, which established a central bank in 1950, has continued its policy of maintaining a large foreign asset reserve relative to the domestic currency liability.

The quarterly figures in Table 1 appear to indicate that several countries do, in fact, take advantage of the flexibility of their discretionary monetary systems to meet the changing financial needs of their economies by allowing the foreign asset coverage of the currency to vary in accordance with changing seasonal and financial demands. As has

[14] Furthermore, beginning with 1952 the data on foreign assets used in the calculations refer to the Issue Department of the State Bank of Pakistan rather than to the total holdings of the Issue and Banking Departments, as in 1948–51. Information on holdings of the Banking Department has not been published for 1952 and later years.

[15] The former Burmese Currency Board was permitted to cover some of its note circulation with Burmese Government securities (*International Financial Statistics*, Washington, January 1956, p. 217).

been noted above, the automatic relationship between the money supply and the balance of payments, maintained in an automatic system, may render the economy incapable of meeting changing demands for finance in response to seasonal fluctuations.

In order to ascertain whether differences between countries in the ratios of foreign asset holdings to currency issue are attributable in part to differences in the relative importance of currency and deposit money, figures on the relations of currency to total money supply and of foreign assets to money supply are presented in Table 2. The countries are arrayed in the same order as in Table 1. In Table 2 gross currency circulation as defined in Table 1—i.e., including currency held by the banking system—is related to money supply as defined in *International Financial Statistics*—i.e., currency exclusive of bank holdings plus demand deposits exclusive of government and interbank deposits. Although there are variations in the composition of the money supply of the 20 countries, the use of total money supply rather than gross currency issue would not have greatly affected the findings of Table 1; all the countries of group I and most of the countries in the other two groups would fall in the same group on either basis of comparison.

The statistics in both Table 1 and Table 2 indicate the amount of foreign assets relative to currency that has been held by the monetary authorities of the countries under observation without regard to the adequacy of these holdings. The question of the amount of foreign assets that is required in connection with a discretionary system, however, raises the question of the adequacy of monetary reserves. Although a general discussion of reserve adequacy is outside the scope of this paper,[16] some attention must be given to the subject.

One criterion of reserve adequacy is the extent to which countries have been able to maintain the foreign exchange value of their currency without resort to exchange restrictions. By this standard it appears that most of the countries in group I have had inadequate reserves. Mexico is the only one that does not maintain restrictions under Article XIV of the International Monetary Fund Agreement.

Restrictions appear to be least severe in Costa Rica and Nicaragua, for which the ratio of foreign assets to currency has increased significantly in recent years. Neither country applies quantitative restrictions on imports. In July 1955, Nicaragua eliminated the exchange surcharges which had constituted its principal restrictions. Mexico, although it maintains no exchange restrictions, has been forced to devalue its currency on various occasions during the postwar period.

Of the second group of countries, only Guatemala and the Dominican

[16] See "The Adequacy of Monetary Reserves," *Staff Papers*, Vol. III (1953–54), pp. 181–227.

TABLE 2. CURRENCY AS PER CENT OF MONEY SUPPLY, AND CENTRAL BANK HOLDINGS OF FOREIGN ASSETS AS PER CENT OF (1) CURRENCY AND (2) MONEY SUPPLY, VARIOUS COUNTRIES[1]

(Averages of end-of-year data, 1948–55)

	Currency[2] as Per Cent of Money Supply[3] (1)	Foreign Assets as Per Cent of Currency[2] (2)	Foreign Assets as Per Cent of Money Supply (Col.1 × Col. 2 ÷ 100) (3)
Group I			
Brazil	38	37	14
Bolivia	59	38	22
Costa Rica	56	42	24
Colombia	48	46	22
Turkey	47	49	23
Nicaragua	54	52	28
Mexico	53	60	32
Median	53	46	23[4]
Group II			
Philippines	63[5]	69	43
India	69	72	50
Pakistan	67	74	50
Dominican Republic	55	84	46
Guatemala	71[5]	87	62
Thailand	83	94	78
Ecuador	56	95	53
Median	67	84	50[4]
Group III			
Honduras	50	110	55
El Salvador	61	111	68
Cuba	53[6]	112	59
Venezuela	59	119	70
Ceylon	49	124	61
Burma	68	139	95
Median	56	116	64[4]

[1] Based on data from *International Financial Statistics* (Washington).
[2] Data refer to gross currency circulation, i.e., inclusive of currency held by the banking system.
[3] Data refer to net money supply as defined in *IFS*, i.e., currency outside the banking system plus deposit money which is, by definition, net of government and interbank deposits.
[4] Median is derived directly from figures in column (3).
[5] Average of end-of-year data beginning 1949.
[6] Average of end-of-year data beginning 1950.

Republic apply no restrictions to foreign payments. India and Pakistan are members of the sterling area, and both countries have exchange systems that restrict imports. In India, there has been a relaxation of restrictions in recent years. In Pakistan, restrictions were intensified in late 1952 and in 1953 and remained rather severe in 1954 and 1955.

Thailand and Ecuador have maintained multiple exchange rate systems and other restrictions, but their exchange systems appear to have been less restrictive than those of many other countries, especially some of those in group I. Although Ecuador and Thailand impose some restrictions on imports, the value of imports to which restrictions apply is small in comparison with the total value of imports of both countries. In Ecuador, import restrictions consist only of a prohibited list; in Thailand, restrictions are applied to a list of specified goods which are either prohibited or subject to import licensing. Since January 1, 1956, Thailand has conducted all exchange transactions at a single fluctuating free market rate. In general, the countries in the second group appear to have maintained relatively sound currencies and to have encountered less serious payments problems than most of those in the first group.

The four Latin American countries in the third group (that with the highest ratios of foreign assets to currency issue) impose no restrictions on foreign payments. Ceylon and Burma belong to the sterling area, and their restrictions apply mainly to transactions with the dollar area.

Another measure of reserve adequacy is the relationship of foreign assets to imports. Central bank holdings of foreign assets as a percentage of imports are given in Table 3 for the same countries covered by Tables 1 and 2. Generally, the countries in group I have reserves that, by this standard, are considerably less adequate than are the reserves of most countries in groups II and III. In groups II and III, however, there are considerable differences among countries.

If holdings of foreign assets are to be adequate for financing foreign transactions, they must normally be maintained at some appropriate (though not invariable) relationship to the value of total imports. Therefore, the greater the value of imports, the greater the required holdings of foreign reserves are likely to be. Hence, in countries where imports are large relative to national income and to the money supply, foreign assets also may be expected to be large relative to these factors. In general, the countries which hold the largest foreign assets relative to currency appear also to have comparatively high ratios of imports to national income. Table 4 shows that, with the exception of El Salvador, all the countries in group III have an average propensity to import of 20 per cent or more. In no country in group I and in only two in group II is there such a high propensity to import. The high propensity may at least partly explain why the countries in group III have found it necessary to hold large amounts of foreign assets relative to currency. Among the countries in groups I and II the pattern is less clear, although the median ratio of imports to national income is somewhat higher in group II than in group I. The ratios, of course, reflect the influence of restrictions as well as fundamental economic characteristics.

In determining the amount of foreign assets that might be released by transition from an automatic currency system to a discretionary system, therefore, a country's propensity to import must be regarded as important. Even after the adoption of a discretionary currency system, countries with a high propensity to import which now operate under an

TABLE 3. CENTRAL BANK HOLDINGS OF FOREIGN ASSETS AS PER CENT OF IMPORTS, VARIOUS COUNTRIES, 1948–55[1]

	Average, 1948–55	1948	1949	1950	1951	1952	1953	1954	1955
Group I									
Brazil	42	70	67	64	27	28	46	17	16
Bolivia[2]	32	42	32	52	38	31	36	17	8
Costa Rica	15	12	9	6	12	20	22	18	20
Colombia	28	28	42	28	25	29	27	30	16
Turkey	50	56	59	69	54	34	40	43	42
Nicaragua[2]	24	13	16	12	29	37	37	22	21
Mexico	34	12	29	52	31	31	39	28	48
Median	32								
Group II									
Philippines[2]	53	68	39	86	51	55	54	43	28
India	134	..	131	173	106	102	148	142	131
Pakistan	108	..	..	129	121	49	85	98	163
Dominican Republic[2]	37	..	..	..	39	33	33	43	37
Guatemala	51	..	54	52	49	57	51	45	52
Thailand	69	76	67	78	77	78	61	51	64
Ecuador[2]	58	50	52	90	59	74	61	38	37
Median	58								
Group III									
Honduras[2]	32	8	11	31	44	37	41	46	36
El Salvador	67	71	91	84	68	63	60	51	42
Cuba[2]	87	..	..	81	77	72	98	93	99
Venezuela[2]	51	46	53	56	50	52	52	47	53
Ceylon	39	46	50	48	43	24	15	38	45
Burma	97	61	135	129	110	115	117	58	50
Median	59								

[1] Based on data from *International Financial Statistics* (Washington). Imports are valued c.i.f. unless otherwise indicated; they are totals for calendar years, except those for Burma, which refer to years ended September 30. Data on foreign assets used in calculations refer to end of calendar year (see Table 1, footnote 1, and text footnote 14).

[2] Imports f.o.b.

automatic currency system might find it impossible to release any of their holdings of foreign assets now immobilized as currency cover.

Other criteria of reserve adequacy include the size of the nonmerchandise component of foreign payments, the seasonal pattern of external transactions, the stage of development of banking and other financial

institutions, and other characteristics peculiar to individual countries, such as exclusive dependence on a single export crop.

The need for reserves as indicated by the various criteria bears no uniform relation to the money supply and still less to the currency com-

TABLE 4. IMPORTS AS PER CENT OF NATIONAL INCOME, VARIOUS COUNTRIES, 1948–54[1]

	Average, 1948–54	1948	1949	1950	1951	1952	1953	1954
Group I								
Brazil	12	14	12	10	15	13	7	13
Bolivia	..	..	..	..	..	..	..	..
Costa Rica	..	..	..	..	..	..	..	..
Colombia	16	16	11	13	16	15	18	19
Turkey	11	11	12	10	11	13	10	9
Nicaragua	12	..	..	12	..	..	..	..
Mexico	13	11	12	13	15	13	14	15
Median	12							
Group II								
Philippines	15	20	21	11	14	13	12	13
India	7	..	8	6	8	8	5	6
Pakistan	9	..	..	8	10	11	6	..
Dominican Republic	20	..	..	..	20	23	20	18
Guatemala	15	16	16	15	16	14	14	15
Thailand	21	17	21	20	23	22	20	..
Ecuador	13	..	..	10	12	12	12	18
Median	15							
Group III								
Honduras	22	22	23	19	22	27	21[2]	19[2]
El Salvador	15	16[3]	..	14	..	..	..	..
Cuba	31	32	30	32	33	31	29	28
Venezuela	29	..	31	28	32	27	28	..
Ceylon	35	38	36	30	35	39	36	30
Burma	20	19	13	16	21	23	21	24
Median	26							

[1] Based on data from *International Financial Statistics* (Washington); United Nations, *Monthly Bulletin of Statistics* (New York); and United Nations, *Statistics of National Income and Expenditure* (Statistical Papers, Series H, No. 8, New York, September 1955).

[2] Beginning with 1953, figures used as national income component of ratio represent gross national product at market prices.

[3] Very crude estimate of national income.

ponent of money supply. Nevertheless, it is significant that, of the 20 countries examined, most of those with the more adequate reserves (as indicated by their comparative freedom from stringent restrictions and frequent devaluations) have held foreign assets equal, on the average, to about 70 per cent or more of the currency issue during the period 1948–55.

This suggests that automatic currency countries which are similar in essential respects to these countries could expect, by adopting an independent system, safely to reduce their foreign asset holdings by an amount equal to no more than about 30 per cent of the assets now immobilized as currency cover or circulating medium. This figure should be interpreted as an average for a period of years. A somewhat greater reduction in holdings might be safe for automatic currency areas which, compared with the countries studied in this paper, have unusually large currency issues (and corresponding foreign assets) relative to imports. Such a condition would reflect either an unusually low propensity to import or an unusually high ratio of currency to national income.[17]

The foregoing remarks apply only to foreign assets immobilized as currency cover or used as domestic circulating medium. Foreign assets held by marketing boards or other government agencies, which are large in some British colonies, are not immobilized as currency cover, and the adoption of an independent monetary system would not necessarily affect the rate at which these holdings should be used. The part of privately owned foreign assets which would be most likely to be directly affected would be the holdings of commercial banks. As noted above, establishment of a central bank might permit the banking system as a whole to economize to some extent its holdings of liquid assets (including foreign assets and local currency).

The findings of this paper regarding the need for reserves may be compared with those of other investigators. The authors of a study of British Colonial Africa, for example, indicated that a reserve of 50 per cent of the currency, or perhaps even less, would be "perfectly adequate

[17] The critical relationships may be illustrated algebraically as follows: Let R = holdings of foreign reserves, M = imports, Y = national income (or some substitute such as gross national product), and C = (gross) currency circulation. This paper has examined statistically for 20 countries the ratios, $\frac{R}{C}$, $\frac{R}{M}$, and $\frac{M}{Y}$. If we further introduce the ratio, $\frac{Y}{C}$, which can be conceived as a kind of primary money-income expansion factor, we would have the identity, $\frac{R}{C} \equiv \frac{R}{M} \cdot \frac{M}{Y} \cdot \frac{Y}{C}$. For automatic currency economies, $\frac{R}{C} \equiv \frac{R}{M} \cdot \frac{M}{Y} \cdot \frac{Y}{C} \equiv 1$.

The algebraic relationship may also be examined in terms of the money supply (S) instead of gross currency (C), i.e., $\frac{R}{S} \equiv \frac{R}{M} \cdot \frac{M}{Y} \cdot \frac{Y}{S}$ $\left(\frac{Y}{S}\right.$ being the income velocity of money$\left.\right)$. As shown earlier, the use of money supply statistics in place of gross currency data did not invalidate our findings $\left(\right.$of course $\frac{R}{S} < \frac{R}{C}$; and if $\frac{R}{C}$ is reduced to 0.7 then it follows that the ratio $\frac{R}{S}$ would be reduced to a still smaller fraction$\left.\right)$.

for the maintenance of convertibility."[18] On the other hand, Dr. Greaves has expressed the contrary view that "to reduce the sterling counterpart funds by anything like 50 per cent would be to take a great risk. . . ."[19] Dr. Greaves indicated further that reserves of two thirds of the present total is probably the minimum amount that can be held with safety; this finding does not differ by much from that of the present study. The special characteristics of the economy should certainly be studied carefully before deciding the requirements of foreign exchange assets in any particular case. If any reduction in foreign asset holdings were considered prudent, it should no doubt be made slowly in order to avoid jeopardizing confidence.

[18] W.T. Newlyn and D.C. Rowan, *Money and Banking in British Colonial Africa* (Oxford, 1954), p. 259.

[19] Ida Greaves, *The Colonial Sterling Balances* (Princeton University, Essays in International Finance No. 20, September 1954), p. 14.

Other Publications

Balance of Payments Yearbook

Volume 7 of this series continues the loose-leaf system used for Volumes 5 and 6 under which the Fund's balance of payments data for individual countries are published monthly as the data become available. The seventh volume when completed will contain basic statistics, with explanatory notes, for about 65 countries for the years 1954 and 1955; and for about two thirds of the countries, regional details will be shown. New analytic tables and staff commentaries will be given, and similar material contained in Volumes 5 and 6 will be brought to date. Consolidated area statements for such country groups as the United States and Canada, the sterling area, OEEC countries, and the Latin American Republics will be shown, and also summary statements for most individual countries, expressed in U. S. dollars. Information given in the fifth and sixth Yearbooks will not, as a rule, be repeated in the seventh. However, any new or significantly revised data for past years that become available will be shown. The three volumes are so planned that they may readily be used together to provide a comprehensive review of balance of payments statistics from 1947 through 1955.

Price of the loose-leaf sections covering the entire Volume 7 is $5.00 (or the equivalent in other currencies). A binder for filing the sections may be purchased separately for $3.00. NO BOUND VOLUME WILL BE AVAILABLE, but a title page and a table of contents will be furnished for the convenience of subscribers who may wish to bind their loose-leaf sections.

International Financial Statistics

This monthly bulletin is a standard source of statistics on all aspects of domestic and international finance. For most countries of the world, it gives annual, quarterly, and current monthly data on exchange rates, gold and foreign exchange holdings, bank assets and liabilities, interest rates, international trade, and other related items. Notes describing the series are also included.

The items on money, banking, and finance in *International Financial Statistics* present, where possible, consolidated statements for the monetary sector as a whole and also for the central bank, the deposit money banks, and related financial institutions. The form of presentation is designed to assist in the study of monetary aspects of currency stability and inflation or deflation. Charts showing quarterly and monthly data for important series are included in the country sections; these charts are drawn to facilitate comparison between countries.

The annual subscription rate for 12 issues postpaid is US$5.00, or the approximate equivalent in the currencies of most countries. Single copy, US$1.00. The journal may also be dispatched airmail at the expense of the subscriber.

THE SECRETARY

INTERNATIONAL MONETARY FUND

1818 H STREET, N.W., WASHINGTON 25, D.C.

6503